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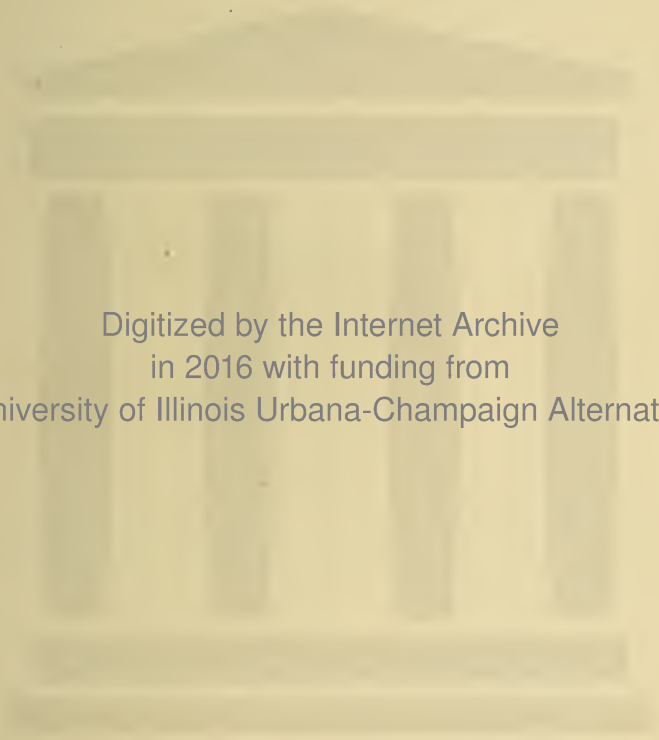
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THE  
**VETERINARIAN;**

OR,

MONTHLY JOURNAL OF VETERINARY SCIENCE,

FOR 1839.

VOL. XII.—VOL. VII. NEW SERIES.

EDITED BY

W. YOUATT,

Veterinary Surgeon to the Zoological Society of London, and late Lecturer on Veterinary  
Medicine at University College;

ASSISTED BY

PROFESSOR DICK, AND MESSRS. KARKEEK AND PERCIVALL.



*Ars Veterinaria post medicinam secunda est.—Vegetius.*

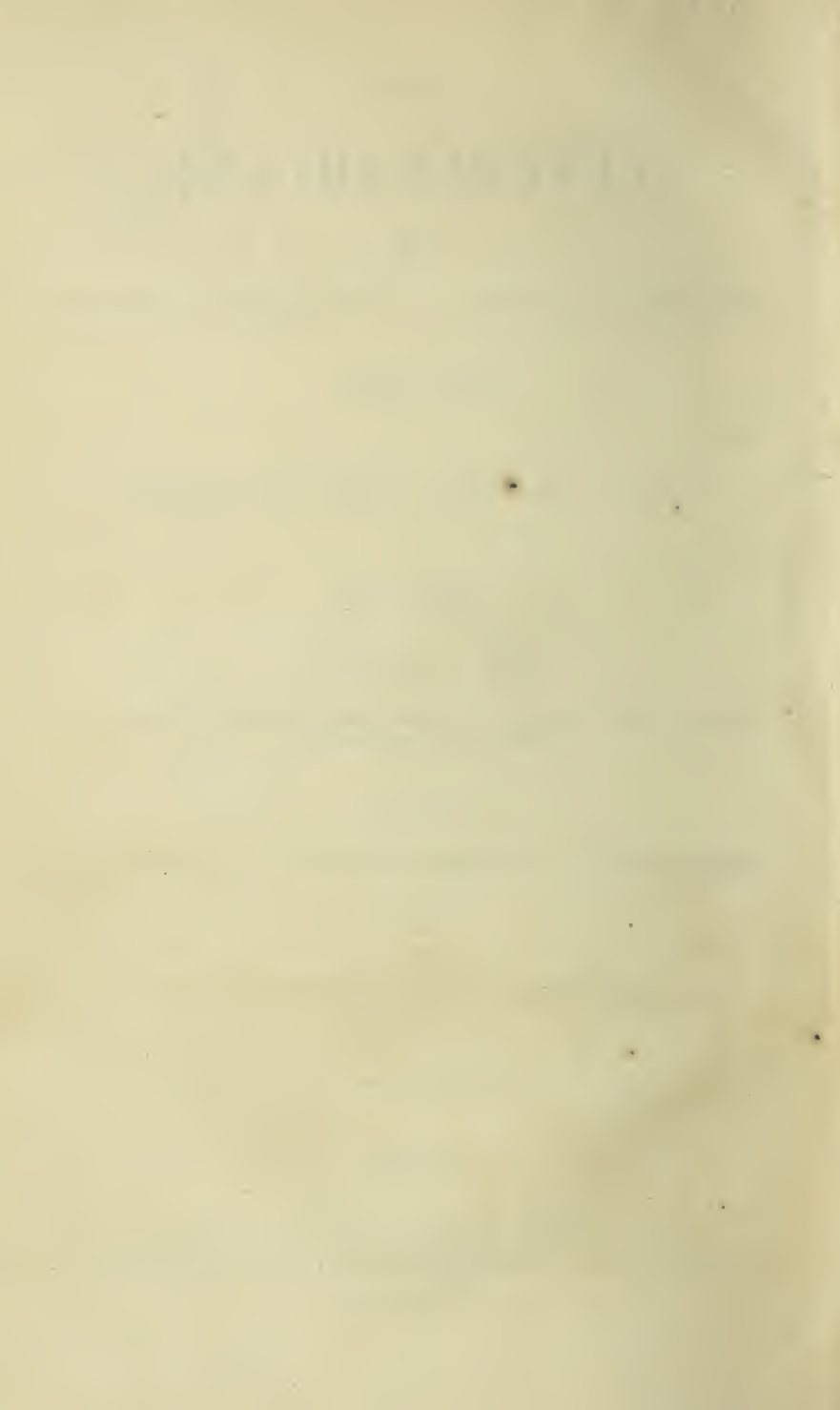
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PATERNOSTER-ROW.







THE  
**VETERINARIAN.**

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VOL. XII, No. 133.]      JANUARY 1839.      [New Series, No. 73.

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[The Editor congratulates himself on being enabled to commence the *twelfth* volume of THE VETERINARIAN with a communication from the father of that periodical, and another from a kind warm-hearted friend who was the first to sanction it by a letter bearing his signature. Twelve years hence may they still witness, and contribute to the triumph of a work which, by its first Editor, was honestly, and heart-and-soul, devoted to the cause of veterinary science, and the character and object of which shall never be changed.—Y.]

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HIPPO-PATHOLOGY.

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INTERNAL DISEASE.

By WILLIAM PERCIVALL, F.R.C.S., *Veterinary Surgeon*  
*1st Life Guards.*

NO general fact appears better established in hippo-pathology than that disease is the penalty nature has attached to the domestication of the horse. So long as the unbroken colt remains at grass or in the straw-yard, even though he be houseless and shelterless, no sort of apprehension is entertained concerning his health: no sooner, however, does the time arrive for his domestication, than from the day—nay, the very hour—he becomes startled, do we begin to look for his “falling amiss;” and so prepared for this event do we feel in our own mind, that, should the animal escape all ailment during this probationary stage of his life, we are apt to regard him as a fortunate exception to what seems to be established as a law of nature. In removing the horse from the field to the stable—from a situation in which he has been exposed to the rude blast and pitiless storm—to one wherein the wind of heaven is hardly suffered to visit him, we have so circumstanced him that his condition, and his capabilities, may be worked up to

a truly exalted and matchless pitch of perfection; but the means we employ to effect all this are productive of unnatural excitement in his constitution, under the operation of which the probability—nay, all but certainty—is, that some part or other of the complex animal machinery will give way. As we render the hardy plant a tender one, although we augment its growth and beauty, by transplanting it from the open air into the hot-house, so we transmute the cool, sturdy temperament of the animal into a habit of irritability, and one that is both ready and apt, from comparatively slight causes, to take on inflammatory action.

In the first volume of "*Hippo-Pathology*,"\* it has been my endeavour to shew, that the natural or necessary consequence of transporting a horse from a cold to a warm situation, and from poor to good living, is the engendering of *plethora* or fulness of blood, the tendency of which state of body is to inflammation, or eruption, "or breaking out:" the seat or site of inflammation or eruption being the part locally predisposed, or that happens to have blood attracted to it by some cause or other of specific irritation; which part, in horseman's phraseology, is said to "fly." The legs, as well on account of their remoteness from the source of circulation as from their dependent position, are by nature the first to "fly:" hence the proneness of young horses recently stabled to swelled legs. Exposed sensitive surfaces, such as the lining membrane of the nose, the windpipe, and the lungs, and also the delicate texture of the eyes, are likewise much disposed to "fly" or take on inflammatory action, not only on account of their exalted degree of innate sensibility and susceptibility, but from the excitement they are especially subjected to in the heated and contaminated atmosphere of the stable. We have only to extend the same train of reasoning to explain upon general principles the production of grease and farcy, catarrh, strangles, roaring, glanders, pneumonia, and ophthalmia; which, collectively, may be said to constitute the catalogue of disorders of young fresh-stabled horses.

*The adult and working period* of the horse's lifetime is that in which, though seasoned and inured to his new domicile, he is still the occasional subject of disease; but his disorders have now become such as arise either from want or irregularity of exercise, or excess of labour, rather than from heat of stable or stimulating diet. *Plethora*, it is true, is manifest in his system; but the parts which in the young animal were too weak to resist its influence, have now gained strength, and no longer "fly" as heretofore: internal parts and organs, and particularly such as receive much blood, are now more likely to fail than those that are external and

\* Already published by Messrs. Longman.

# HIPPO-PATHOLOGY.

remote from the heart. The lungs will still continue very subject to attack because they especially suffer from over-exertion; but the brain and eyes will at this period be failing; the bowels also will now experience occasional disorder from the astringent nature of the animal's food, from the constipations they become subject to for want of proper exercise, and from the disturbances caused in their functions by violent bodily exertion.

*This distribution of diseases* between the growing and adult periods of a horse's life will, of course, vary with the regimen he is subjected to, i. e., his stable management, the nature and quantity of the work he is made to perform, and other circumstances. The view I have taken of the subject is a *general* one: that the facts stated are worthy of some credit—whether the explanations coupled with them be plausible or not—will appear from the subjoined table:—

*A Table shewing the comparative Ages at which Horses appear most disposed to certain organic Diseases.*

DISEASE.	No. of patients under 5 yrs. old.	No. in their 5th year.	No. above 5 and under 10.	No. 10 and upwards; but under 20.	No. 20 years old and upwards.	Totals.
Disease of the Lungs	170	50	20	50	10	300
Disease of the Bowels	10	20	40	70	20	160
Disease of the Brain	4	2	5	14	2	27
Disease of the Eyes.	30	10	70	35	5	150

From this tabular statement, to the extent that it goes, we learn that pulmonary disorders are more prevalent among horses prior to and during the fifth year of their age, the period of their growth and domestication, than at any subsequent time; after that time that they become obnoxious to diseases of the bowels, and occasionally of the brain; and that ophthalmia is a disorder especially prevalent at the adult or most vigorous stage of life.

To enable us to pursue this interesting inquiry still further—to shew at what particular seasons, and months even, these disorders, respectively, prevail (though this is a matter necessarily greatly influenced by weather and situation),—I have, from “Registers of sick and lame horses” regularly kept for many years, drawn up the following table:



*A Table shewing the particular Months of the Year in which Horses appear most subject to certain organic Diseases.*

MONTHS.	Disease of the Lungs.	Disease of the Bowels.	Disease of the Brain.	Disease of the Eyes.
	CASES.	CASES.	CASES.	CASES.
January.....	20	12	1	10
February . ....	25	8	—	9
March . ....	23	11	1	7
April. ....	19	10	6	10
May . ....	13	3	3	9
June. ....	14	16	1	13
July . ....	13	13	3	19
August. ....	11	23	3	17
September .....	11	5	10	19
October.....	24	3	3	9
November .....	19	10	3	9
December.....	16	9	1	4
Totals.....	208	123	35	135

From this synopsis it appears that pulmonary diseases prevail most during the autumnal and winter seasons; that bowel complaints occur oftener in summer than in winter; and that this latter observation is still more applicable to disorders of the brain and eyes.

*The comparative fatality of diseases* constitutes yet another link that may be usefully appended to this chain of inquiry. Searching for the deaths in one of the Registers from which the foregoing tables have been compiled, we find,

Deaths from Pulmonary Disease .....	77
Deaths from other Diseases (Glanders and Farcy and Accidents excepted).....	57

According to this calculation, pulmonary disease carries off more horses than all other maladies besides, setting glanders and farcy out of the computation. It must not, however, be understood that, because more horses die from pulmonary disease than from all or any other, *ergo*, in reference to the diseases themselves, separately considered, that it is the most fatal; on the contrary, pneumonia is not of itself so dangerous a disorder as enteritis; for were horses

so obnoxious to one as they are to the other, more would certainly die from the latter than from the former. The predominance of pulmonary disease, among men as well as horses, is to be ascribed to the variableness of the climate we inhabit, and the continual vicissitudes we are all in consequence necessarily exposed to; against the effects of which it has been found next to impossible to protect our own bodies, much less those of our horses.

*The proportion of deaths* in pulmonary affections is also to be elicited from an adjustment of these computations: it appears in the ratio of 77 to 300, or a fraction more than one in four\*.

*Treatment of internal disease.*—The foregoing practical observations have been submitted with a view of throwing some light on the causes of disease in general, at least of those diseases to which the horse appears most obnoxious; the brief remarks that follow are intended to elucidate their treatment. Reasoning on general physiological principles, one would suppose that, in an animal in whom the pulse in health ranges under 40, the respiration is proportionately slow, and in whom the functions of the alimentary canal are so tardily carried on that we cannot insure the operation of a common purge under twenty-four hours, the progress of disease would likewise be slow; so far, however, is this from being the case, that there is no animal, probably, in which acute disease in general makes such fatal havoc in so short a time as in the horse. An attack of pneumonia has been known to kill in less than twenty-four hours: an enteritic paroxysm in half that time. Changes of structure are in like manner rapid in taking place; and there is a prevailing disposition in the constitution of the horse to convert that which was originally cellular or vascular in its composition into a solid substance; and that which was uniformly solid, but still pliable and elastic in its nature, into a hard osseous substance, no longer flexible or even impressible. These preliminary hints will, perhaps, suffice to evince the absolute necessity there is, in treating the acute disorders of horses, to at once have recourse to

*Remedies prompt to act and efficacious when they do act.*—This property it is which places blood-letting at the top of our therapeutic catalogue, and at the same time renders it a measure to which we are in the habit of resorting so often, even in our ordinary course of practice. A surgeon can vomit his patient almost as soon as the emetic is taken; he can effect purgation in a couple or three hours: the veterinarian can accomplish neither;—at least, the one not at all, and the other but at a period when his patient

\* The proportion of deaths to recoveries is probably too highly rated here, it being well known that cases of slight or incipient pulmonary disorder are very apt to become registered under the head of "Fever."

(labouring under acute disease) is too far overcome, probably, to be recovered. Understanding these important distinctions between veterinary and human pathology and therapeutics, it will no longer remain matter of surprise, why in the one case blood-letting should be so much oftener practised than in the other. Independently, however, of the absolute necessity there mostly is for venesection in veterinary practice, there is still another reason why we, oftener than surgeons, are compelled to employ it; and that is, the consideration, on two accounts, that our patients should not lie long ill: first, because his services are required by his master, and cannot for any length of time be dispensed with; secondly, because expenses are going on for his keep, &c. although he himself is in a condition to earn nothing. These considerations it is which induce us to bleed in many a case that would recover quite as surely and as completely without blood-letting; but not in so short a space of time.

*In regard to medicine*, bearing in mind how requisite it is in general that what we exhibit should take speedy and due effect, we should take care—at least in all cases attended with danger—to run no risk in prescribing as to the event; by which I mean, that in a case wherein we conceive purgation to be highly desirable, it is our duty to insure, by proper dose and kind and form of medicine administered, the wished-for effect without running the hazard of creating a necessity for a second dose, considering how long each dose requires to pass through the alimentary canal. Although this remark applies with more force to purgatives than to other medicinals, still it is one that ought not to be lost sight of in the ordering of any medicine in cases of disorder at all urgent.

*External remedies* turn out of no use in acute or painful maladies, unless they exert greater action than, or make an impression superior to, the morbid one that is going on. The insertion of a rowel or seton, in a case where inflammation is raging with a rapidity which, if not checked in the course of a few hours, must prove mortal, is as futile in practice as piercing the ears of children for ophthalmia, or slitting dogs' ears for congested brain: the counter-irritant must be energetic, promptly and violently operative, to work any benefit in such cases.

*Decision in practice* is a faculty most desirable in any medical man: to the veterinarian it is often absolutely indispensable. A man who has a sick or lame horse must be informed by the practitioner he employs to administer to him, not only whether there be any probability of his dying, but, should his restoration appear probable, in what space the cure is likely to be effected, in order that he (the owner) may make a calculation in his own mind what the cost of keep, &c. will be during his servant's indispo-



sition. But he is not satisfied even with this information; he must know, further, if the animal be capable of being restored to his pristine condition and powers; and if not completely, to what degree of approximation. I repeat, to answer all these inquiries with any degree of correctness and satisfaction, requires a man of penetrative and decisive judgment. Veterinarians have not to administer to the "mind diseased:" they have nothing to do with "placeboes:" their practice is an affair of cause and effect; they must be continually working either good or harm, and without, on the part of their patients (as far at least as their feelings are concerned) being made acquainted with which they are operating until the event has made it but too manifest.

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## ON PUERPERAL FEVER.

*By Mr. KING, Stanmore.*

I BELIEVE that I was the first who brought this subject forward at the Veterinary Society's meetings, in Nassau Street, in 1829; where and when, unfortunately, few of the members then present seemed to be at all conversant with the disorder. You did me the honour to report the substance of what I said in one of the Numbers of THE VETERINARIAN\*. All that I have since heard or read does not satisfy me as to cause and effect; and considering it to be a disease of a most peculiar character, which I confess myself not able satisfactorily to explain, I yet hope, by keeping the profession awake to the complaint, that it may at some future day, through the ability and perseverance of veterinary practitioners, be much better understood. The treatment, however, with the exception of blood-letting, on which some difference of opinion exists, seems to present no very marked discrepancy.

The term "puerperal" or "milk fever," does not seem to convey any correct notion of the disease; for I can see no analogy between it and the human puerperal or milk fever, except that it appears at the period of parturition; but I suppose we must retain this name until some able nosologist shall merit the thanks of the profession by introducing some simple or compound term which shall convey a better idea of the nature of the disease which it is intended to indicate.

I believe that no other animal is subject to this *specific* disorder; and I more particularly so designate it, on account of one singular fact connected with it, viz. that young cows are not the subjects of it. I believe it hardly ever appears before the animal has attained her

\* THE VETERINARIAN, vol. ii, p. 393.

sixth year. This point, if I am right, seems to have escaped the notice of most of those who have spoken and written on the subject.

I am at a loss to understand how in some districts, and under some practitioners, the success attending the treatment of these cases is so marked. If I save half my patients I am satisfied. A few cases will illustrate my views of this disease, and my mode of treatment.

CASE I.—*Feb. 8th, 1837.*—My own cow, a large half-bred York, eight or nine years old, calved well. There was nothing amiss at night, but she was found on the morning of the 9th down. I gave her immediately sulphur twelve ounces, and sem. croton. thirty grains. I was compelled to leave home, but I ordered, in case flatus should supervene, a draught at night, containing six ounces of sulphur; and my man, to make sure of the case, gave it. I returned late at night, and wished it had not been administered, for the belly of the cow was quite soft, and she lay in a favourable position.

Before the morning of the 10th, profuse purging took place, and so much so, that I began to fear that the treatment had been pushed too far: however, with nursing, and two or three warm drenches, she went on favourably, and got up during the night of the 12th. I kept this cow, and she calved in March 1838, all right.

This case does not require much comment, except that I did not bleed. The prognosis was favourable, perhaps, from the beginning. I calved her the second time, experimentally; for I once knew a cow drop in two consecutive calvings, and recover. Cows are changeable property, and it may happen to an individual cow more than once, for ought we know.

CASE II.—An Alderney seven-or-eight-year-old cow calved early on the morning of June the 16th, 1838. She appeared to be well throughout the day, but she was found down on the morning of the 17th.

At ten A. M. she had an aperient draught. Her position was good; belly soft; and there was no flatus.

18th.—At ten A. M. the draught was repeated. At four P. M. she got up. In this case the prognosis was favourable: there was no apparent improvement on the second morning, but in the afternoon she got up suddenly, and begun cudding. No bleeding.

CASE III.—An old half-bred Alderney calved well on January the 15th, 1838. There was no complaint during the day; but she was observed to be amiss on the 16th. I saw her at two P. M. Before I touched her, I said "She will fall soon." The superficial vessels were all so turgid that I determined on bleeding. While the attendant was gone for a bucket, she did fall. I bled her, taking away six or seven quarts. Considerable flatulence quickly came

on. She took, directly after the bleeding, an aperient, which was repeated at night. She died before five o'clock on the following morning.

This case at first presented only the common symptoms. I thought, from the circumstances above alluded to, that bleeding might be useful. Perhaps I did not carry it far enough. She did not live above sixteen or seventeen hours. How could inflammation have produced death in so short a time?

CASE IV.—A half-bred York, eight or nine years old, calved well on July the 22d. I am often applied to for what is called a cleansing drench, and always send an aperient. Such a drench this cow took as a precautionary measure, and she had no complaint through the day; but on the morning of the 23d, she was found down. She took the aperient at nine A.M. The belly was soft; but nothing passed the bowels during the day. Her position was favourable. Draught repeated at night.

24th, 9 A.M.—Another draught was given. Belly continued soft, and there was no flatulence: bowels acted in the course of the day, and she got up during the night.

Three of these cases exhibited very little flatulence; possibly the expeditious attendance might prevent this: but that supposition is not borne out by the third case. No bleeding.

Indigestion, bad food, and bad treatment, are assigned as causes. Common indigestion, and consequent flatus and distention, to any excess, are not attended with the peculiar "dropping" character. In this complaint the disengagement of air does not take place until after the cow is down. As to bad food, I do not know to what latitude the term is meant to extend; but my observation induces me to consider it as possessing very trifling if any influence: for I find the cow under every circumstance of previous keep equally liable, nor have I found that it is more fatal in summer than in winter.

Bad treatment I likewise erase from the list of causes. I doubt whether it is possible, by any extreme of diet or management, to induce or even predispose to the complaint.

Excessive excitation of the uterus, and plethora, are offered as causes. If so, I should imagine the young animal equally if not more incident to the affection than the old one; and the blood which nourished the fœtus is not only in a considerable quantity taken away by the fœtus itself, but the remainder speedily finds employment in the udder. There can be no doubt that nature amply provides for all such changes.

Supposing it simple debility or paralysis, and on this head the observations of Mr. Friend (supported by Dr. Marshall Hall's Lectures on the Excito-motory System) are, I readily admit, entitled

to much consideration—yet how is the sudden disappearance of the complaint, and almost complete restoration of healthy action, to be accounted for, as in Case II?

I never knew a case requiring manual assistance attacked by “dropping,” however much the uterus and parts connected may suffer by the necessary interference; but I am speaking of my own experience, and do not deny its occurrence in the practice of other veterinarians.

Inflammation of any part, I conceive, could not have proved fatal in so short a time as in Case III; and it seems a fact, that cases recover as speedily without bleeding as with it.

I do not observe that the French veterinarians say much about the complaint: do they not meet with it?

Perhaps you will say, “Well! you have not given us any clue as to cause and effect in this malady.” I have before said that I cannot: but I shall be most happy to give my meed of applause to any one who may accomplish so great a desideratum.

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[We confess that we have sometimes thought that our continental neighbours have been almost as much at a loss with regard to our friend’s “cause and effect” in this disease as we have been. They sometimes speak of a certain “weakness of the loins” following parturition; and not produced by protracted and painful labour, or by any manual operation, but occurring from some unexplained cause, and in consequence of which the cows remain down, and without the power of rising one or two or more days, often eating and drinking just as usual. At other times they speak more plainly of compression or inflammation of the crural plexus of nerves, and this connected with or dependent upon inflammation of the womb, and that arising from improper general treatment, or the administration of stimulants, or exposure to cold: but there is not a sufficient distinction of symptoms to enable us to trace with any degree of certainty the “effect” to its true “cause.” Some cases are designated as metritis, in which the animal after awhile gets up again almost as well as ever; and others are said to die of metritis, and yet there is scarcely any inflammatory appearance to be detected in the uterus. There is a great deal yet to be learned on both sides of the channel respecting this too frequent and fatal malady. To Mr. Friend *we* owe much, and to him we shall, perhaps, be ultimately indebted for removing those difficulties with which it cannot be denied the subject is still attended.—Y.]



THE INTRODUCTORY LECTURE TO  
MR. MORTON'S COURSE ON MEDICAL CHEMISTRY.

THE mind of that man cannot be rightly constituted, who, having chosen the vocation of an instructor, does not feel the weight of the responsibility which attaches itself to that situation.

It will be readily believed that I am not a stranger to the duties that devolve on me, yet, oftentimes, when I review the vast field that lies before me, the amount of labour required for its cultivation, and the little time I can devote to it, I am tempted to turn my back upon the plough, and to withhold my hand from scattering the seed over the fruitful, although as yet nearly unbroken, soil. There are, however, two incentives that urge me to continue my labours, and which indeed offer an almost irresistible impulse to perseverance. The first is a settled conviction—every year more deeply impressed upon my mind—that the student of veterinary medicine requires instruction in those divisions of science which I have selected as the groundwork of my lectures. The second is the kind encouragement which I have uniformly received from my pupils. I should do injustice to them, and violence to my own feelings and principles, did I not publicly and honestly confess that this has often buoyed me up, when many other circumstances have tended to depress me; it has at once scattered all my fears to the winds, and I have determined still to press onwards. It has doubly armed me for the contest, and, thus panoplied, I am resolved to persevere in my endeavours, feeble although they are, hoping that victory may ultimately crown my efforts; and I shall become of some little use to the veterinary student by imparting to him such information, in a very important branch of his profession, as in after-life he will find of value. I will venture to express a hope, that “every attempt, however feeble, that leads to another, may be considered both a step and an advancement.”

That I may not be accused of attempting to deceive, let me frankly tell you at this the commencement of my lectures, that as yet, at the College, no instructor has been appointed in those divisions of science to which I am about to direct your attention. The time, however, will come, when such an appointment must take place; and then gladly—if need be—will I resign all pretensions to be a teacher: but, until that period arrives, I will continue my efforts, assured of this, that I shall receive from you the same kindness I have from others.

On another point I would be equally explicit. It is not my inten-



tion to lecture on the science of *general chemistry*. You have the privilege elsewhere of listening to lectures on this more difficult but highly important division of our subject, and my remarks, if you please, may be considered as subsidiary to them. The time, however, will come, and I shall hail it with delight, when this too will be considered necessary; for why should not the education of the student of veterinary medicine be as comprehensive as that of the practitioner of human surgery? More especially would I say, that those divisions of chemistry which are connected with agriculture should be taught, for the veterinary surgeon is necessarily much thrown into the society of the agriculturist; and from the soil, I had almost said, spring many of the diseases to which his patients are liable; at all events, the herbage of the farm yields them food, and often medicine, and too frequently is the source of disease. With every thing connected with this he should therefore be conversant. He should be able to avail himself of every beneficial agency, and to counteract every malignant one. Here the science of chemistry will be highly useful, although it may not wholly unfold every mysterious operation. This I have long viewed as a division of science fraught with hitherto unappreciated advantage to the veterinary art, as well as intimately connected with the public weal. The union of these important branches of instruction is perfectly natural, and consonant with our best and most ardent wishes. Events are now transpiring that may lead to its accomplishment, and my sincere wish is that that union may be speedily perfected.

At present, my aim will be to communicate to you such information as the state of veterinary science demands, and the branch of chemistry to which your attention will be directed is that connected with medicine. One reason for my doing so is, that the period devoted by you to study at the College is limited—too much so indeed: yet during it you are required to become, and should be made conversant with, those principles, the application of which, in after-life, will conduce, it is to be hoped, both to your honour and your profit. The foundation thus laid, may be safely and easily built upon, and the superstructure will afford the highest gratification which the human mind can enjoy.

It is sometimes pleasing to trace effects to their causes, or, as the simile may apply here, occasionally in our journey to look back to the spot whence we started, and to measure the rapidity and the extent of our progress. Some persons may be inclined to ask, What induced me to attempt to give lectures on these subjects. I reply, that I saw their importance, and the disadvantages under which the student of veterinary medicine laboured from their being withheld. The task was first undertaken when, in the late London

Veterinary Medical Society, I, as Secretary, offered some imperfect remarks on the medicinal substances used in the College. The following year, some of the students solicited me to repeat them. I readily complied; but found that, in order to render them satisfactory and useful to my class, they required to be prefaced by a brief consideration of the elementary bodies, and the laws which govern their union, involving, in fact, an outline of chemistry as applied to medicine. I had boldly placed my foot on almost untrodden ground—to me it was then quite so—and yet I dared not turn back; shame indeed prevented me, for I dreaded the epithet “coward!” I took another, and still another step; and, receiving fresh courage as I went on, I trust I may, without the imputation of being an egotist, assert, that I have continued to augment my lectures up to the present day.

Now, what has been the cause of this? The increasing wants of the student of veterinary medicine, arising from the advances which the profession is making in estimation and in value. It, in common with every other art and science in this our day, is rapidly progressing towards perfection; and, doubtless, these divisions of the studies of the pupil will hereafter receive more marked attention, for they have been long, too long neglected. The fact, however, must not be withholden, that, of late years, the system of instruction has materially improved. Its sources are more numerous, its waters more pure; they, therefore, who drink not of the streams, may be said to deserve to suffer all the horrors of mental thirst.

I confessed to you, at the commencement of my lecture, that I felt the responsibility of the situation in which I now stand; but if there is a responsibility resting on the teacher, there is one equally as serious appertaining to the pupil. If *he* labours not, the labours of the instructor will be in vain. If he does not treasure in his memory the information communicated to him, if he does not honestly employ the utmost powers of his mind in appreciating the truth and the importance of the lessons which are taught, his hours will be, indeed, misspent; and, hereafter, when the spring-tide of youth has passed away, the gay days of summer are o’er, and the winter of life is approaching, he will have keenly to deplore the time which has been lost. “If the spring puts forth no blossoms, in summer there will be no beauty, and in autumn no fruit: so, if youth is trifled away without improvement, manhood will be contemptible, and old age miserable.”

Let me entreat you, if you value the esteem of the wise, and wish to become respected members of the profession that you have chosen, to occupy the time of your residence here honestly and solely in the acquirement of sound and correct principles con-

nected with veterinary science. You have now the opportunity to do this; and although, by and by, some farther alterations may, nay must, take place in the education of the student, with these you have not to do: avail yourselves of those means that are already before you, for they are truly valuable. But you will do well to remember, that it is a great evil to *hear* only. You must think, and think seriously too, on what you have heard, or the impression will be evanescent, and consequently worthless. It is thinking which leads to true knowledge. Believe me when I tell you, that you may see, and hear, and read as much as you please, but you will never really *know* any thing, unless you think over and over what you have seen, and heard, and read. It is by thinking that knowledge is made the property of the mind; while the acquirement of knowledge is the acquisition of power, and its usefulness is evidenced in its judicious exercise. I have been accustomed to say to those who have done me the honour of listening to my imperfect remarks, Think not that to listen is all you will have to do. Apply the fable of Jupiter and the countryman. Let *your* shoulders be put to the wheel, and by subsequent reading and study impress on your minds the statements which fall from me. Closely investigate their truth, and apply their principles. Reason on them, and sift their value. If, indeed, there was a science the knowledge of which could be acquired without mental labour, it would cease to deserve the name; and although the study of any and every science seems at first an arduous undertaking, and is, for awhile, irksome, yet let the outer barrier be once broken down, and the threshold crossed, the mastery of it becomes comparatively easy, while fresh beauties make their appearance at every step. As for the difficulties that present themselves at the commencement, be assured that they are more apparent than real; and it is only boldly to resolve to overcome them, and they disappear. You are not contented to listen merely to the lectures of your professors, nor do you learn your anatomy by listening only to demonstrations. No; you must carefully dissect and investigate for yourselves, or else, when you appear before the Board of Examiners, you will find yourselves miserably deficient, and meet with a deserved repulse. So must you do if you are anxious to become proficient in those branches of study to which these lectures will be particularly directed.

I well know the anxiety with regard to his knowledge of chemistry which the student often feels at that period; the reason of which is, that the consideration of chemistry and materia medica has been imprudently left by him to the last few months, and then they are considered to be extremely difficult; and so they necessarily are, and so would every other branch of his studies be under



similar circumstances. My earnest advice, then, to the young pupil is, so to arrange his studies that each division may have its due share of attention. This is imperative upon you, because, as I have already observed, the time of your residence at the College is far too short, considering that during it you are to acquire those principles which are to govern your future practice, and not one of which is to be forgotten or slighted.

The most that any establishment can do is to *inculcate principles*. It is idle to talk of not being able to gain a practical knowledge of our profession either here or elsewhere; for this can only be the result of experience.

Sedulously, then, endeavour to be in possession of principles; for after you have gained them, although you may not, at first, manifest the expertness which older heads and hands do in detecting disease, and applying the required remedy, yet you will be always able to assign a good and sufficient reason for the plan of treatment which you have adopted, and every thing else will follow as a natural consequence. And not alone, as it refers to your employers or your practice, will it be found that the acquisition of sound principles is advantageous; but, Gentlemen, you have a right to associate with the scientific and medical world; and, if you are true to yourselves and to the profession of which you will form a part, you will do so. Then will be manifested and felt by you the benefits which result from an acquaintance with correct principles. Contrast with this your feelings if, when among medical men, you are unable to join in scientific conversation, or to enter into a discussion with them on matters with which you ought to be peculiarly conversant. Therefore, if you value yourselves, and the estimation in which you may be held, *do not be content with getting just as much information as will enable you to obtain your diplomas*—the very bane of the education of the student at the present day—but be chiefly solicitous to obtain those sterling principles on which your practice and your reputation may securely rest.

Rapid, of late years, has been the march of the mind; unexpected, and almost incredible, the improvements which have been made in every science; and incalculable is the good which must ultimately result from this. Let it not be said that the veterinary art alone advances not—that its students, and its practitioners, and its teachers, are content to allow it to remain stationary, and consequently to become contemned—that among all the sons she has brought forth there are none to guide her onwards in the career of improvement; but, both by your deportment and your attainments, invest the science with such a halo of light as shall cause it to be observed and admired by a discerning public.

Although man is proudly designated the lord of the creation,

and the cure of "the ills that flesh is heir to" is a noble calling, yet does his happiness intimately blend itself with the well-being of the creatures that are placed below him in the scale of existence. Undesirable and dreary, indeed, would be his state and condition were he alone the occupant of this nether world. The lower animals contribute to his daily comforts, as well as to his luxuries, neither of which can be enjoyed if the former possess not health. From this very circumstance it will at once be seen arises the importance of the veterinary art.

The day is happily gone by, the dark age has passed over, when the village farrier, with a clyster-pipe and bladder in one pocket, and a long-necked bottle and a roll of tow emerging from another, and brandishing his twitch as a weapon of offence and defence, is the only person to whom our domestic animals are entrusted. Men of education are, in our division of medicine as well as in the superior one, now sought after—those who possess scientific knowledge; since it has been ascertained that the powers of life are the same in man and in the brute, and that both are governed by the same laws and influenced by similar agents.

It is superior knowledge that has raised the educated veterinarian above the mere empiric—above him whose treatment of diseases is by recipes handed down from generation to generation as a kind of heir-loom in the family;—of whom, if you ask the reason why he does so and so, he replies, "my father did so before me, and his father before him, and they never failed to cure their patient—then why should I?" while, probably, he is unacquainted with the very name of the disease which he is combating, and of the organ which is principally at fault. It is such persons as these who have too long usurped the place which should have been occupied by men of talent, and it is with them that you will have chiefly to contend; for, jealous of your superior appearance and education, they will have recourse to every meanness and falsehood in order to depreciate and to injure you.

To this very class of men, however, we are often indebted; for there are to be found among them some noble exceptions to the degrading peculiarities of which I have spoken; men who, had they possessed the advantages with which you have been favoured, would have shone as stars in their profession, and who, even now, are highly esteemed, and justly so, for their sound and experimental knowledge of the nature and treatment of disease, gained by perseverance and careful observation, so that in this respect they may be safely held forth as examples for you to follow.

I trust that here, and when you return to your homes, you will avail yourselves of every opportunity of improvement in the knowledge and practice of your profession; and be assured that



you have only heartily and honourably to engage in the study of it, in order to become conversant with it. "Wisdom is found of those who seek her." Let each, then, influenced by honourable emulation, endeavour to excel the other. Let there be among us a spirit of ready and easy communication; banishing that narrowness of mind which has too often been allowed to take so deep a root, and excited an unworthy and a prejudicial feeling of jealousy. Let the motto of our Association, "*Vis unita fortior*," be inscribed on our banners; and let this incite us, so that by union the best interests of our profession may be advanced.

I will only farther observe, that I hope to see the time when all the means required for the education of the veterinary student will exist within the walls of the College. It will afford me some gratification, if I shall have been the humble instrument of contributing to this. I hope that my having been the first person who introduced lectures on the medicinal agents employed there, may lead to the appointment of an abler and a more experienced teacher; but until such an one is appointed—I repeat it—so long as the students require my assistance, these humble lectures shall be continued.

I feel that some of the observations which I have ventured to submit to you are liable to objection, and that they would have become me better had they been delivered in the autumn of life, when Time had scattered his snows upon my head, and Care had wrinkled my brow; but they have been given from a love of truth, and an honest conviction that they have not been uncalled for.

I yield to no man in respect for the Professors at the College. I feel assured that each has contributed his share to veterinary science. They have also maintained its respectability, and advanced it by their individual conduct: nevertheless, much has remained undone. This has not been their fault, because it was not their duty to perform it; besides which, it should not be forgotten, that the wants of the student were not, some years ago, what they now are; for it cannot, must not, shall not be said, that veterinary science has not made some advances, while every other branch of knowledge has been rapidly progressing.

Having made these prefatory remarks, I now come to the plan which I purpose to adopt in these lectures. The first division will include the principles of medical chemistry. Matter, with some of its properties, and the powers that influence it, will first be commented on. Next will come the sub-division of matter into two grand classes—imponderable and ponderable substances. Having disposed of the first, the second will embrace the consideration of the elementary bodies. Each elementary substance, taking, however,

such only as enter into the composition of pharmaceutical agents, will be separately dwelt upon: nor will any compound, formed by the combination of two or more elements be introduced, until its constituents have been fully considered. The proximate principles of animals and vegetables will be then noticed, which will close this division, and which will include their various secretions, and excretions, and spontaneous changes. In the second division, I shall endeavour to give you the history, natural and chemical, of the medicinal substances which are employed at this establishment, and by practitioners generally, constituting the veterinary materia medica. The manner in which therapeutical agents produce their effects will be described, and a classification attempted of such as are used in veterinary practice. The compounds which constitute the pharmacopœia of the College, deserve, and will receive attention; and this division will include an exposition of the means of detecting poisons. Experiments, diagrams, and drawings, will be resorted to, in order to illustrate and impress on your minds the various positions laid down.

From time to time examinations of the progress you are making will be instituted, since to this there can be no real objection; rather, such examinations will be pregnant with benefit; for they are not intended for the purpose of teaching by *grinding*, as it is called, but of ascertaining the real progress of the pupil. I deprecate that preparation which consists in his answering, like a parrot, a certain string of questions on certain points, and knowing or thinking of nothing beyond them. The only advantages that can arise from his instructor's examinations are, he is enabled to give definite and succinct answers to certain questions on the most important divisions of his studies, and his memory is refreshed on various points which would otherwise be quite forgotten. These are the objects I shall have in view in my occasional examinations.

Such, gentlemen, is the plan I shall endeavour to pursue,—such the vast field before us,—the almost untrodden path which we have to traverse. And what can I do, who only at eventide can stroll forth to cull some of the rich flowers which, wildly scattered, grow on its fair surface? In truth, the labour of a master-hand is wanted here—of one who knows how to dig about the roots, and to prune the straggling branches,—to spread the manure, and deeply to plough and sow the seed—to break the hardened clods, and to scatter the fertile soil, so that germination may soon be induced, and the young plants caused to grow and thrive.

But I will patiently persevere. Aided by you, we *will* cross the barriers which seem almost to preclude our entrance on this fertile spot; and if we are enabled to cultivate only a small portion,

much will be effected, and the task will be easier for those who are to follow us.

The time, perhaps, is not yet come when so much is required of the student of veterinary science as of him who is, by a proud distinction, called the medical student: but I can tell you, that the former treads closely on the heels of the latter; and I have seen in most towns that which I hope and believe is still increasing, the existence of a cordial friendship between the members of this and the other profession; and thus it will be, if the veterinary student is solicitous to acquire information, and comports himself so as to merit the esteem of the wise and good. It is not the calling or the vocation which commands respect; but the conduct of the man in it. One of our best writers has said, that "It is the glorious privilege of Englishmen that no rank or condition of life precludes their attaining to the highest honours if they have talent."

The time is fast coming when much more will be required of the veterinary surgeon than now is, and then he will take his proper standing in society. Be anxious, then, to improve. There never was a truly sensible man who was satisfied with the knowledge he possessed; and the greater the difficulty to be overcome, the more honourable the attempt to achieve it.

It is only by men of scientific attainments that the veterinary art has been, and can be successfully advanced. Do you ask for proofs? I refer you to the works of those of our own day—Professor Coleman, Moorcroft, Bracy Clark, Peall, Blaine, Percivall, Youatt, Goodwin, Turner, Stewart, W. Spooner, cum multis aliis. What a phalanx have we here! But there are others who, although not authors, have, by their industry and their talents, earned for themselves the highest honours. What will you say when I name Assistant-Professor Sewell, and a John Percivall, a Field, a Castley, a Dick, and, last, but not least in my estimation, a Charles Spooner? These have all gained the laurel wreath, although with too many of them it is now blended with the cypress.

[To be continued.]

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## ON LIFE AND ORGANIZATION.

*By Mr. W. F. KARKEEK, Truro.*

IN introducing this lecture to your notice, I do so with the greatest degree of diffidence, inasmuch as the nature of the living principle has never yet been discovered, and is very probably far beyond the reach of human investigation.



In contemplating the operations of Nature's laws, we perceive extraordinary changes constantly going on in bodies around us, beneath us, within us; and, what is more, changes manifestly adapted for future use, and wonderfully conspiring together for our good: yet we are entirely ignorant of the intimate nature of these changes—we are unable to unravel the mystery.

But do these mysterious phenomena, derive no additional interest from the very circumstance of their being not understood? Just such an interest as an unmechanical looker-on feels in the working of a steam engine. Is it necessary that the man, in order to be convinced that design, that intention, that contrivance, have been employed about the engine, shall be allowed to pull it to pieces, in order to study its construction? No; for all the purposes of ascertaining the existence of counsel and design in the formation of the engine, he wants no such opportunity. What he sees is sufficient. The power of the engine, its beautiful construction, and, what is more, its perfect adaptation to the purpose for which it was made, all testify the hand of a *contriver*.

In the earlier ages, heat was considered the principle of life; in later times electricity has been discovered; and to electricity the same functions have been ascribed. By heat, for example, many wonderful things may be accomplished; but heat will not act of itself. The powers of Electricity are still more wonderful than those of heat; but electricity we know to be governed in its mode of action by certain laws, and that it gives no sign of intelligence.

Some philosophers (of the French school in particular) have supposed that *matter* possessed a capacity of assuming active energy, and changing itself into various modes of organized existence. We see, it is true, that organization has an inseparable relation to life. We see organization only in living beings; yet it is the vital principle which is the great architect, that models all the organs of the body—that is the great source from which all action springs, and the essence of the perfect structure of parts. There are so many striking and important differences between the properties of animate and inanimate matter, that I am at a loss to conceive how the functions of life can be carried on without a something, an *immaterial something*, superadded to the common agencies of matter, over which, to a certain extent, it has a controul.

Matter has no action of its own, but only the aptitude of being acted on by other agencies. It is entirely inert, and remains for ever in a state of quiescence, when not exposed to the active energies of other powers. It is true that this agency is invisible to our senses; yet it is in perfect accordance with the unity of the system—the one law given by the Creator.

The first point which claims our attention, in order that we may

obtain a knowledge of material nature, is, that it must be considered as made up of two general elements, *substance* and *action*, the former having weight in the scale, and occupying space, and the latter being altogether invisible.

Thus, every vegetable and animal, every growing and living thing in the material creation, is made up of two parts,—its material substance, of which the being itself can neither originate nor destroy a single atom, and its peculiar action, or life, which makes it an animal or a vegetable, or one species of either, and not another.

This last, as determining the grand outlines of the character of every individual, may be considered as the essential part of it, as the *agent*; while the mere matter—the substance of which its frame or body, however shaped or organized, or whether large or small, is composed—can be regarded only as the *instrument* with which the agent works. This agent is a truly wonderful power, and must excite our admiration.

“Search undismayed the dark profound,  
Where Nature works in secret; trace the forms  
Of atoms, moving in incessant change  
Their elemental round: behold the seeds  
Of Being, and the energy of Life,  
Kindling the mass with ever active flame,—  
Then say if nought in these external scenes  
Can move thy wonder?”

Not a sparrow falls to the ground without its controul; there is not a mote that dances in the sunbeam, or a particle, it may be not the millionth part of a mote, which is not as much under its government as the mightiest mass of creation.

We have a very good example of this powerful agency in the extraordinary activity, and almost incredibly rapid development, of cellular structure in a plant. There is a species of fungus, the “*Bovista giganteum*,” that has been known to acquire the size of a gourd in one night. Now, supposing, with Professor Lindley, that the minute cells of this plant are not less than the  $\frac{1}{2000}$ th of an inch in diameter, a plant of the above size will contain no less than forty-seven hundred million cellules; so that, supposing it to have grown in the course of twelve hours, its cellules must have been developed at the rate of more than sixty-six millions in a minute.

Now, it requires no argument to prove, that if matter, in all its forms, in all its varieties, according to our notions of them, is made up of elementary particles so infinitely small, that *action*, on matter of whatever kind it may be, and the effect produced by that action, must be ultimately divisible with the same degree of minuteness, so that the effect of any cause acting upon matter



must become, in their smallest amounts, as it were, just as invisible to our observation as the elementary particles of matter itself.

The animal kingdom\* furnishes us with another striking and beautiful example of this. There have been animalcules discovered, whose magnitude is such that a million of them does not exceed a grain of sand, and yet each of these creatures is composed of members as curiously organized as ours. They have life and spontaneous motion, and are endowed with feeling and instinct. In the fluids in which they live, they are observed to move with astonishing speed and activity; nor are their motions blind and fortuitous, but evidently governed by choice and directed to an end. They use food and drink, from which they derive nutriment, and are therefore provided with a digestive apparatus. They have great muscular power, and are provided with limbs and muscles of strength and flexibility. They are susceptible of the same appetites, and obnoxious to the same passions. Must we not conclude, then, that those creatures have hearts, arteries, veins, muscles, nerves, circulating fluids, and all the concomitant apparatus of a living organized body? If so, how inconceivably minute must those parts be! If a globule of their blood bear the same proportion to their whole bulk as a globule of our blood bears to our magnitude, what powers of calculation can give an adequate notion of its minuteness?

I need scarcely repeat, then, that if the minute particles of a living body are so imperceptible, that the effect of any cause acting on them must be equally invisible, it matters not what is the action, or what the result, when it comes to its full development. "It may be the consolidation of a globe†, such as the earth, out of matter, so far dispersed over space, and so thin, that a volume of it would not amount to the millionth part of the smallest grain of sand; and, as space is boundless, and the extent to which gravitation extends is equally so, this may be the mode in which new worlds are formed out of the ruins of former ones, which have been scattered over space in an ethereal fluid, fine beyond all comprehension, beyond the ken not only of man, but of the superior intelligence of the brightest spirit which is before the throne, and thus known only to Him who is all-seeing, as well as all-powerful." But here the curtain is drawn before us, and we may not attempt to lift it.

"It may be the first formation of a little crystal whose congregated multitude shall stand up in some giant mountain looking athwart hundreds of miles of the land and the sea;—it may be in the

\* Prout's Bridgewater Treatise.

† Mudie.

accumulation of the first misty drop, more fine than the lightest 'rack' which floats in the upper air, but which in due time will congregate and ripen, and condense into the mighty flood of the wide-rolling ocean;—it may be the first movement of the young growth in a plant, the primal impulse of that oak which is not to become even an acorn till a thousand years have passed away, and ten successive generations of the forest have mouldered in the dust;—or it may be the yet more mysterious germ of animal life which stands secure in the law of its *Maker*, though ten thousand generations of its race may pass away ere it comes to its final development, appear on the earth, inhale the breath of life in the air, perform its appointed functions, and then is gathered to the dust;—it may be any or it may be all these, or any of the countless thousands of actions which take place in nature; and yet, if you attempt to trace it backward to its rudimental beginning, it not only eludes the sense, but sets the imagination at defiance." As it is written, God created all things out of nothing; and it is a most striking confirmation of the sacred truth, that we can follow not only substantive matter, but all these actions to which the various forms and changes of matter are owing, down to the very bourn of nothingness, and there is knowledge even at the very verge—at that mysterious boundary where the mists of oblivion begin to thicken around the mind; for here we find all matter tending to one simple *elementary form*, and all action of matter tending to one simple elementary effort; nor can we help being equally astonished and delighted by the extreme simplicity at which we thus arrive, and the magnificent system which has been thence produced.

In every part of the earth, and to whatever substance our attention is directed, we meet with nothing that is what we might call primary or original: every thing we meet with is a production, the result of some secondary operation, which secondary operation is a natural cause, and therefore not only open to our inquiry, but urging us to inquire. It is not enough for us to fold our hands in idleness, and content ourselves with saying, that any one appearance, or thing, or place, is part of the creation of God; for it would be presumptuous in us to pretend to have the slightest knowledge of the condition of worlds as they come immediately from the hands of the Almighty. All created things address themselves to us by a long line of descent; and though we cannot see the secondary mode of production, we can trace it backwards as far as facts and philosophy will bear us out; yet we cannot, and we dare not, even speculate about the *primary step* when Almighty Power willed the commencement of a world, or of a race of inhabitants.

There was a time, no doubt, when life did not exist on our

planet; when our globe, as far as imagination can venture to consider it, must have consisted of a fluid mass, with an immense atmosphere, revolving in space round the sun; and that, by its cooling, a portion of its atmosphere was condensed into water, which occupied a part of its surface. In this state, no forms of life, such as now belong to our system, could have inhabited it; and it is generally supposed that the granite rocks that abound so plentifully in our native country, and which contain no vestiges of a former order of things, were the results of the first consolidation on its surface. Upon the further cooling, the water, which more or less had covered it, contracted; depositions took place, shell-fish and coral insects of the first creation began their labour, and islands appeared in the midst of the ocean, raised from the deep by the productive energies of millions of zoophytes. These islands became covered with vegetables fitted to bear a high temperature, such as palms and various species of plants similar to those which now exist in the hottest parts of the world. As the temperature of the globe became lower, species of the oviparous reptiles were created to inhabit it; and the turtle, crocodile, and various gigantic animals of the *same kind*, seem to have haunted the bays and waters of the primitive land. But in this state of things there was no order of events similar to the present: the crust of the globe was exceedingly slender, and the source of fire a small distance from the surface.

It would be foreign to my lecture to enter farther into this subject. It is enough for my argument, that in the discoveries of the geologist in *fossil osteology* we read, in the successive strata, the successive efforts of creative energy, from the sterile moss of primitive formation up to the fair and fertile superficies of the globe, enriched with animal and vegetable decomposition; and we are thus clearly enabled to draw the line between *inanimate* and *organized matter*, and to perceive that the latter is the *result of a distinct principle, of something added to the former*. Here, then, we may contemplate a progressive system of organic being, graduating towards perfection through innumerable ages, proving to a demonstration that life in general is some principle of activity, added by the will of Omnipotence to organized structure.

We are, as I before stated, entirely ignorant of this power—of its nature, or whether it be separate and distinct, or a compound; and all the efforts to penetrate its nature have been equally unsuccessful, from the commencement of the world to the present time. Thus we find at last, that the philosopher with his *anima* or his subtle and mobile vital fluid, and the chemist with his caloric and electricity, are just on a level, in respect to the mental process by which they have arrived at it, with the



“ Poor Indian, whose untutor'd mind  
Sees God in clouds, and hears him in the wind.”

But we cannot be wise beyond our powers of observation ; and therefore we must yield to our own weakness, and fairly confess that this part of our subject is, in its principles, altogether beyond our depth.

Still the effects of those agencies are as open to our notice as the most familiar piece of matter, upon which their effects can be displayed ; and if I cannot tell what life is, it is very easy for me to inform you what life does.

When the signs of life are carefully considered, it will be found that they are reducible to *five* ; or, that there are five properties which are peculiar to living beings, and by which, therefore, they are distinguished.

Of these the *first is, the property of the living principle to resist, within certain limits, the operation of the ordinary laws of matter.* Physical agents exert over *inorganic* bodies a constant and irresistible influence. Air, moisture, heat, produce in all such bodies incessant changes, subverting the closest union between their integral particles, and forming them into combinations entirely new ; and, however trifling the amount, not even a breath of wind can pass along the surface of the earth without altering, in some degree, the proportions of the bodies with which it comes in contact ; and not a drop of rain can fall upon a stone without carrying away some portion of its substance. This effect is forcibly, though rather ludicrously, exemplified in the great toe of the bronze statue of St. Peter at Rome, which, in the course of centuries, has been worn down to less than half of its original size by the successive kisses of the faithful.

The power of the superior animals, and especially man, to resist high degrees of temperature, at first discovered by accident, and afterwards made the subject of direct experiment, is very extraordinary. Drs. Fordyce, Blagdon, and others, exposed themselves in an oven heated above the point to which water boils, as high as 264°. The heat of their bodies never rose more than one or two degrees above the usual temperature. At the end of twelve minutes they left the oven, very much fatigued, but no otherwise disordered.

By the same power the living body is capable of bearing with impunity intense degrees of cold. In climates and seasons when the thermometer indicates a degree of cold much below zero, the temperature of the body continues almost unchanged, and all the functions of life go on with impunity.

Other facts indicate a controlling power equally characteristic. Seeds endowed with vitality remain unchanged under circum-

stances in which they would certainly be destroyed, were they destitute of the powers of life. They remain buried many thousands of years deep in the bowels of the earth; yet, when accident throws them on the surface, they immediately develope properties which had been latent for unknown ages.

Seeds pass uninjured through the digestive organs of animals, exposed with impunity to the most powerful of all solvents of vegetable and animal matter, the gastric juice. Hence worms are capable of living in the stomachs of animals.

The property of hibernation in animals is another curious phenomenon, exhibiting in a wonderful manner the preservative powers of life. In this state, the usual vital processes are either wholly suspended, or go on with an extraordinary degree of slowness. The fat dormouse, which in winter falls into a torpid state, illustrates what may be considered as the lowest degree of hibernation. When the cold weather sets in, these creatures roll themselves into a ball, and in this state may be found in hollow trees, or clefts of rocks. They may be rolled about in this state without rousing them. Nothing, indeed, seems to awaken them from their lethargy but gradual heat: while sudden exposure to a fire causes death.

Not less remarkably is the influence of the vital power exemplified in the protection it affords the body from disease. Against the influence of noxious agents the living body is endowed with a power of resistance which affords it complete security as long as the vital energies continue vigorous; but when these decline, the very causes which before made no sensible impression upon it, now prove fatal. Hence, the weaker the body the more susceptible is it to the influence of physical agents, and the less it is capable of resisting the effect of those that are noxious.

*The second property peculiar to life, is the power possessed by organized beings of assimilating foreign matter to their own substance.* The plant puts forth its root into the soil, and, abstracting the nutrient particles it finds, converts them into its own proper substance. The animal receives into the interior of its body the different substances from which it derives its nourishment, dissolves them, decomposes them, recombines their elements in new proportions and in different modes, and thus forms all its tissues, and all the organs which anatomy displays, as comprising structure. The succession of nature in the progress of the individual, enables us to draw a clear distinction between the organic and the inorganic. We know of no such operation as growth in inanimate matter. It is true that diamonds appear to be formed in not a very great number of years in some soils; and we know that crystals exist in our own country, as they are abundantly met



with by the Cornish miners; but neither of these is growth, any more than the formation of crystals of common salt when the water that held them in solution is evaporated. These are not growth, but mere aggregations,—gatherings of matter together without any change of its nature. There is not in all the wonders of chemistry a single instance of assimilation, or the transmutation of one substance into another, as we find in the organic world. Grass is changed into the flesh of bullocks, and beef into the flesh of man; but all the labour of the alchymist could not change a single metal into another; for although tin and lead are not very unlike each other in appearance, it would be just as hopeless to attempt changing the one to the other, as it would be to attempt turning brickbats to ingots of gold, or hailstones to diamonds.

[To be continued.]

## ON RABIES IN THE DOG.

By NIMROD.

Dear Sir,—A MULTIPLICITY of avocations, added to occasional absence from home, have prevented my doing more than wishing well to THE VETERINARIAN and its contributors, which I do with my whole heart, considering it to be one of the most interesting and useful periodicals of the present day—and this not merely to the sportsman, or the owner and lover of horses and cattle, but to the scientific man and the philosopher.

Now, with what subject shall I commence? Surely, none forces itself more earnestly on my mind than your own admirable lectures on animal pathology, touching Rabies in the Dog, to which I have ventured to draw the attention of Sir Francis Burdett, previous to his projected Bill in Parliament on this most important subject. It is one not only somewhat congenial with the pursuits of this worthy baronet, but his undertaking the difficult task of combatting with the source of the evils arising from the abuse of one of the great ends of Providence,—the services of that noble animal the dog—is quite in character with the man.

But what is the result—to myself, at least—of a perusal of the above-named lectures? Why, little short of a total dissipation of all my former views of the *causes* which lead to that fatal disorder, the *rabies canina*, and *vulpina*, or madness in dogs and foxes. It is true, that my reading on this subject has been next to nothing. I had merely satisfied myself with believing the dog, living on animal food, must be among those creatures whose fluids have a tendency to putrefaction; that when exposed to heat and

hunger—to which dogs are so cruelly exposed—the liquids must for a considerable time undergo the actions of the containing vessels, and frequently perform the course of the circulation without any new supplies of food; by which the fluids becoming more and more acrid, the creature is apt to fall into feverish and putrid diseases, often ending in madness, but which diseases seldom or never are contracted by those that live on vegetable food. Hence I considered the danger of keeping dogs in places exposed to the sun, without a proper supply of fresh water, and also of allowing them to eat bones, and other offensive offal found in the streets of large towns, for which purpose, by the by, we are told that in some countries they have been, and are, especially kept. Hence I was induced, some three years back, on seeing thirty-two useless curs all at one time in the market place of Calais, on a hot day in August, to write a letter on the subject to the authorities, through the medium of a newspaper, warning them of danger from those two-and-thirty curs. Then, on the other hand, I had read, that these supposed causes, and indeed all the causes commonly assigned for rabies, are insufficient to produce it in dogs and other animals of that genus, and this on authority of no small worth. That heat is insufficient, has, it seems, been proved by the fact of the disease being totally unknown in South America, at periods in which it was very prevalent in the northern parts of Europe; and that, so far from putrid aliment being injurious to the health of the dog, it is found in this state to be most agreeable to him. Then, as to want of water, the disease has, we know, in thousands of instances, occurred among dogs that are plentifully supplied with that element in its most pure state, whilst others long deprived of it, have remained perfectly free. In fact, I have now and then met with an accredited writer, Doctor Heysham, for example, who not only denies the efficacy of the causes commonly assigned for the *rabies canina*, but the nature of the distemper itself; and conjectures that the cause of it is not a *putrescency*, but an *acidity* of the fluid.

To come, however, to the main point, *prevention* (at present, perhaps, the only real ground of hope), all that Sir Francis Burdett or any other man can do, until a remedy for the disease called hydrophobia shall be discovered, is to endeavour to prevail on the legislature to lay such a tax—a *parochial*\* one—on really *useless* dogs, as will greatly diminish the number of them. Among these must be classed what is called the cur, the most numerous of any, and I have good reason to believe, the most useless. Whatever a cur *bitch* may do as a protection to property, a cur *dog* is none,

\* I lay stress on the word “parochial,” because in that case each man would see that his neighbour either paid the tax or kept no dog.

and I can give a remarkable instance as proof. When I resided in Hampshire, I occupied a farm, a mile and a half from the one which belonged to my house, and where the man who had the charge of it kept one of the most vigilant dog curs I ever beheld. No one could pass, or even approach the house without his tongue being heard, and, having a dislike to me, he gave notice of my approach long before my arrival. Well; one might suppose such an animal would be useful; but mark the result. It was the custom of my servant, when any quantity of threshed grain lay on the floor, to put this apparently faithful and vigilant animal into a cow-house, adjoining the barn, and *within six steps of the door that led into it*. The barn was robbed of a quantity of beans one night, the thieves entering by this door, but no tongue was heard. On a second occasion, a quantity of wheat lay on the floor, and the dog was again placed in the cow-house. My servant happening to awake in the night, saw, by the light of the moon, a man coming out of the same door, with a well-filled sack of wheat, having a donkey at hand to carry it off, but *not a whimper from the cur dog was heard*. Having a gun in his hand, the thief was secured, and convicted at Winchester of the offence. But the cur, it may be said, is necessary to protect the property of the cottager. I deny this. In the first place, his constant yelping, for he will bark at the moon, creates no alarm; and, in the next, what are a dozen cabbages, or even a few fowls, when put into the scale against the chances of spreading the horrible disease alluded to! The yard dog is also, as perpetual instances assure us, subject to the same spell as that by which my cur was made dumb; in short, as Townsend, the Bow-street officer, told a friend of mine, house *dogs* are of no avail. "If you wish to have your house secure from thieves," said he, "a small cur *bitch*, and a light in a window, varying the window occasionally, give you the best chance." An additional tax on cur *dogs* would, no doubt, be desirable; and it is, I believe, an established fact, that there are more cases of rabies in dogs than in bitches. Indeed, there did exist a vulgar notion, that a pregnant bitch is inaccessible to the disease. *Credat Judæus; non ego*: but none of these old notions are quite destitute of foundation, as Pasley says of common sayings. They are common, because they are true.

I now come to the main point of all.—*How is rabies canina propagated?* You say, by inoculation, and by that alone. You challenge the production of a single well-established case of *spontaneous* rabies, and I do not find your challenge is accepted. Well, this is a great point gained, as far as allaying the fears of persons from dogs which they are led to believe are kept in that state favourable to the production of the disease. In one case within my knowledge, you are certainly borne out in your assertion. Some years back,



the Warwickshire *dog* pack of fox-hounds, to a certain extent, became rabid. Not a case occurred in the *bitch* pack, which, as a matter of course, was kept separate from them, but *they fed out of the same troughs* and on the same food. Considering the vast number of hounds of all descriptions that are kept in Great Britain, it must be admitted very few become rabid, which I, and thousands of others, have attributed to the absence of predisposing causes, such as eating bones and other foul and indigestible matter; and to being physicked and kept clean. Nevertheless, the fact that, when once rabies enter a kennel, it spreads to a certain extent, is corroborative of your assertion, that inoculation *alone* is the cause. It of course follows—this being admitted—that the only chance of lessening the quantity of the disease is to lessen the number of dogs, which alone have the power to create it.

Allow me to observe on one part of your thirteenth Lecture on Rabies in the Dog, wherein you speak of the propensity of the rabid dog to eat all kinds of filth, and among them, human excrement, and at length his own. That the dog is naturally a filthy feeder is quite apparent to any one who watches him narrowly; and as for his propensity to eat excrement of his own species, a short experience in a kennel of fox-hounds will render that matter familiar to him. It is, indeed, an every-day occurrence, both there and on the road to cover, when nothing of that nature comes amiss to the hungry but healthy fox-hound. “The dog returning to his vomit” is become a figure of speech, how unpleasing soever the act may be to the eye. Depravity of appetite, however, is, I am aware, an attendant on the early stages of rabies in the dog, and should be carefully watched when exhibited.

I very much admire your severe strictures on the “beastly lady’s lap-dog,” but I fear they are placed beyond the reach of any prohibitory tax. How many horrible cases of hydrophobia have been recorded as having been caused by fondling and caressing those misplaced brutes! That of the Honourable (the beautiful, as she was justly called) Mrs. Duff first presents itself to my mind. Guess, then, my surprise, when I saw her husband, the Earl of Fife, three years back, in Scotland, sitting a whole evening with a king Charles’s spaniel on his lap, occasionally licking his hand! A remarkable instance of the danger of these animals occurred only last year to an old lady residing not half a mile from where I now sit. Her dog shewed some awkward symptoms, and was shut up. She insisted upon taking him his supper, because he expressed much delight at seeing her. The moment she approached near enough, he flew at her and bit her deeply in the heel. The actual cautery was applied, and nothing bad has been the result; but the conduct of the police on this occasion was praiseworthy. They not only



had the dog immediately killed, but the cats of the house also. By the way, Mr. Editor, did you ever hear what Sir Hussey Vivian did, when a child of his was bitten by a rabid dog? The gallant General himself sucked the poison from the wound, and fortunately all was well. The experiment, however, was a hazardous one.

I never was personally acquainted with more than one man who had been bitten by a rabid dog, an intimate friend of Mr. Tattersall, but I cannot this moment remember his name. He had six "diamond-shaped bits," as he termed them, excised from the calf of his leg, at St. George's Hospital; "but," said he to me, "the pain was so excessive, I could not have endured a seventh." He also mentioned other circumstances which are worthy of record, as *cautionary* ones. The accident occurred in Piccadilly. He made the best of his way to Sir A. Cooper, but he was not at home. Ditto Mr. Earle. Putting himself into a coach, then, he was galloped to the hospital, where, the instruments being on the table, he was operated upon instantler. I saw him two years afterwards, when he assured me all apprehension was at an end.

You state that foxes and pigs become rabid, which I can confirm. Whilst hunting with the Earl of Derby's stag hounds, some years back, my horses lay at the Derby-arms, in Croydon. The ostler, Chandler, an excellent servant, was bitten by a tame fox in the yard, apparently in good health, and he died hydrophobous. I was in the daily habit of seeing the fox at this time, but observed nothing remarkable in him. When a boy, on my return from a morning's ride with my father, I remember our being greeted by the swine-herd with these words: "Sir, two of the fat pigs are *mad*." So it was: they roamed about the circular sty, grunting and foaming at the mouth, but did not bite. There were four others in the sty, but they were not affected. This reminds me of Taplin's dumb madness. "In the dumb madness," says he, "if the dog be confined, he *barks incessantly for a day or two!*" See vol. ii; *Sporting Dictionary*, article *Dog*.

It is not for me to say how far the disease called hydrophobia, in the human subject, is capable of being subdued by any of the medicinal powers which have hitherto been, or may hereafter be, tried. When the disease has been perfectly *genuine*, that is to say, arising from the bite of a rabid dog, it is my opinion that no cure has been effected; at least, no one has been satisfactorily recorded. You eloquently observe, that "the whole circle of veterinary pathology does not contain a more important subject:" to which may be added, the medical one as well, inasmuch as, for all other diseases to which humanity is subject, the palliative, if not the remedy, has been found. But, Sir, do not despair; indeed, I

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think you once told me, you did not despair of producing an antidote to this fearful disorder, the very contemplation of which causes the bravest amongst us to shudder, associating its horrors with our own case, or with that of a relation or friend. And why should you despair? Nothing seems wanting to the triumph of *art*; and why should her sister, *science*, be far behind her in the field? Your experience in this field is inferior to none; your ability to avail yourself of it is already displayed:—that the palm and the laurel, then, may be claimed as your reward, or, I should rather say, *as part of your reward*, is the sincere wish of, dear Sir,

Your's faithfully,  
NIMROD.

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## SINGULAR MALFORMATION OF THE INTESTINES IN A COLT.

*By Mr. J. B. SIMONDS, Twickenham.*

THE following narrative will, I think, illustrate the propriety of the veterinary surgeon making a post-mortem examination in all cases that may have terminated fatally, and which he attended. It certainly cannot be said to be the most agreeable part of the practice of our art; but surely it is as interesting and instructive as very many of its branches. What satisfaction must all of us feel, exclusive of that produced in the mind of our employer, when we have examined a case, and find the abnormal appearances to be such as we were led to expect from the symptoms during the life of the patient! This will surely be more than a sufficient compensation for any little trouble, disagreeable smells, or dirty hands we may have been subjected to during the investigation. But more especially is it pleasing, when we have chanced to hazard an opinion as to what will be the appearances, and on examination find that our opinion was correct. It may with truth be said, that here the properly educated, persevering, and practical veterinarian can boldly take his stand, and drive from the farmer's yard and the gentleman's stable the farrier of the olden time and the empiric of the present day.

Some persons, perhaps, are ready to exclaim, This is all very true; but suppose the picture to be reversed, and instead of finding that which we expected and encouraged the owner to suspect, we should be presented with altogether different lesions: what will then be his opinion of us? Will not this be the way to lose, instead of adding to our professional reputation and practice? No! By far the majority of your employers will be pleased to find you fear not

to face the broad glare of day, and shew to the world that all is candid, straightforward, and honest with you; that there is no secret to be kept to suit narrow-minded ends, and to prop up, with deceit and mis-statements, that which must soon become, if it is not at present, a tottering practice.

Yet suppose, and now and then these things will occur, that the person who has consulted you is dissatisfied, and seeks advice from a neighbouring practitioner, whereby you sustain some pecuniary loss; what will be the result? Why, at best he has gained nothing. Possibly he is gone to some well-informed veterinarian in the neighbourhood, who, be it remembered, is equally liable with yourself to make occasional mistakes. And should such occur, either real or fancied, he will be treated just as you previously had been, and he will either apply again to you, or, if not, he will send for some one of the numerous body of farriers, and thus subject himself to great and perpetual losses, not merely in the amount of the bill, but in the length of time, should the animal ultimately recover, that the case is under treatment, and he is thereby deprived of the animal's services.

A bay brood mare, of great value, the property of J. Lloyd, Esq. Gothic Cottage, Twickenham, produced a fine horse colt early in the morning of the 28th of May last. The birth was effected without any unusual difficulty; and shortly afterwards the foal was on its legs, instinct guiding him to seek nature's prepared food, his mother's milk. Presently, however, he began to exhibit symptoms of acute abdominal pain, such as pawing with the fore feet—striking at the belly with the hind ones—turning his head to his side—curling his tail—dropping upon his body and rolling over—quickly rising again, going to the dam, and making attempts to suck. The extremities were warm, as well as the surface of his body.

I could gather little as to the excitement or irritation going on in the system from the pulse of so young an animal. Believing that the above-described symptoms were produced simply from retention of the meconium—in order to effect its removal, and consequently an alleviation of the pain, some of its mother's milk was given, which, in my humble opinion, far excels in medicinal as well as nutritive quality any preparation of art. Repeated enemas of tepid water were likewise had recourse to, and which, I remarked, were almost immediately returned quite colourless.

These means failing to give relief, hot cloths were applied to the abdomen, and, towards noon, a little oil, with a few drops of the tincture of opium, was given, which appeared to produce, for a short time, some slight cessation of suffering. The enemas, and fomentation, &c. to the belly, were repeated during the afternoon,



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and in the evening a solution containing three ounces of Epsom salts was administered.

At midnight I paid my patient another visit. He was still in pain, but it was not of so acute a character as before; the enemata continued to be returned quite as colourless as ever; and the finger, passed into the rectum, was unstained. I was informed that the foal had been sucking several times during my absence; from which, and its symptoms generally, I considered that it was somewhat better, and might still rally. Some milk and an enema were directed to be given at intervals during the remaining part of the night.

29th.—Delusive was the hope I had cherished, and all chance of its recovery had now fled. I found my poor patient down, making ineffectual and distressing attempts to rise; life being unwilling to depart until forcibly, as it were, ejected, and Nature having left only power sufficient for it to throw its tortured frame from side to side. The respiration was painfully laborious, and the extremities and surface of the body deathly cold. The head was drooping on its straw bed, the eyes closed, and a discharge of frothy saliva from the mouth. The pulse imperceptible even at the side. In this state it continued until noon, when its sufferings terminated, about thirty hours after the birth.

Being desirous of correctly ascertaining the cause of death, and how far a retention of the meconium might be connected with it, I had the foal immediately sent to the infirmary, in order to make a post-mortem examination, principally of the intestinal canal and other abdominal viscera. Having exposed the abdomen, I was struck with the large quantity of small intestines which presented themselves. Being distended with gas, they completely concealed from view the other viscera. On turning these aside, the cæcum was found to be filled with meconium, and I remarked the smallness of that intestine. The colon was likewise distended with the same peculiar substance; but from the large volume of small intestines I did not then perceive any singular formation or deviation from natural structure in this bowel.

In order to make a more minute and satisfactory examination, I commenced dissecting away the mesentery from its spinal attachments, so as to remove the whole of the intestines. I was much surprised, as I proceeded in my dissection towards the posterior portion of the spine, to find that there was a sudden discontinuation of attachment of the mesentery to the lumbar vertebræ. At the sacrum it again commenced, leaving a space of about four inches between the two points. This latter portion may more properly be styled the meso-rectum, as I found it supported that in-



testine, and which proved to be a distinct bowel, having no communication with the colon, but beginning with a blind pouch next to that viscus.

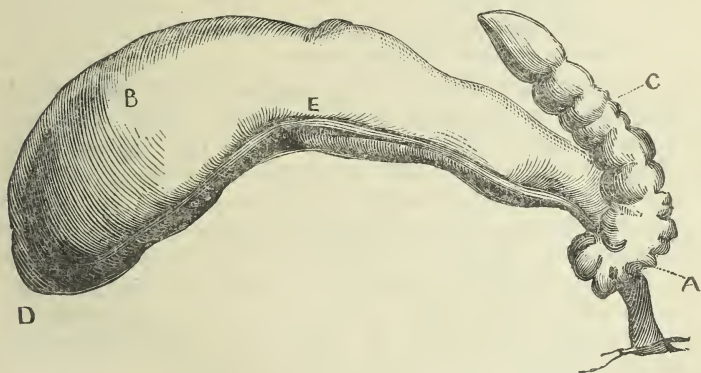
Leaving it in its situation for awhile, the other bowels were removed, when the colon was likewise discovered to be a most singularly formed intestine. Commencing at the cæcum caput coli, it extended forward towards the diaphragm, and at that extremity formed a slight curve, as if about to return, but abruptly terminating in a blind pouch, thus cutting off the communication and passage into the rectum. It bore a resemblance to an elongated cæcum, being a single gut, but, unlike that viscus, it increased in calibre, instead of diminishing, towards its end.

The stomach and small intestines were naturally formed. The same may likewise be said of the cæcum, except that it was smaller than it is generally found to be.

After having sawed in pieces and removed the pelvis, the rectum, as attached by its mesentery, was taken out. Being anxious not to lose such singular specimens of Dame Nature's freaks, I had a drawing made of the parts; and as they can be better explained by that sketch—which is here annexed—I beg to refer your readers to it.

Fig. 1 represents the cæcum, colon, and a small part of the ileum:—

Fig. 1.



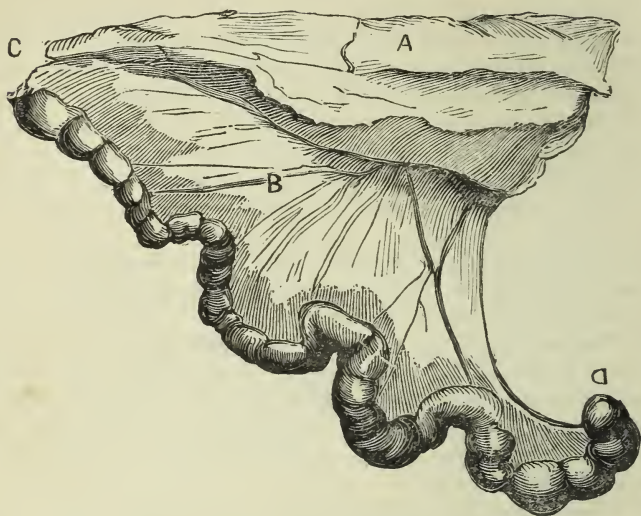
- A, the ileum.
- B, the colon, which was about 15 inches in circumference at this part.
- C, the cæcum.
- D, blind pouch of the colon.
- E, the mesentery or mesocolon, forming a band running along the intestine, and having no attachment or connexion with the spinal column.

A to D, greatest length of colon, measuring 2 ft. 6 in.

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Fig. 2 is the rectum with its mesentery, and the sacrum:—

Fig. 2.



- A, the sacrum.
- B, mesorectum.
- C, the anus.
- D, blind pouch, or beginning of the rectum.
- C to D, about 20 inches in length.

A few reflections on the above abnormal, or, more properly speaking, peculiarity of formation, may be useful. First, This case entirely nullifies the opinion held by some, that the use of the meconium is, in the fœtal state, to preserve the passage through the intestinal canal, which would otherwise collapse and adhere. Now, we find the rectum to be a distinct intestine, and into which not one particle or portion of meconium could by possibility enter; yet it is of proper calibre, length, &c., without the slightest adhesion of its sides in any part; proving that Nature can make and preserve complete the intestinal canal without calling to her aid the passage through it of any material or substance.

Another important fact is shewn, namely, that it is not absolutely necessary for the preservation, growth, and otherwise arriving at perfection (if the term may be allowed) of the fœtus in utero, that this peculiar excrement should be voided, but that it may be, and as in the foregoing instance was, retained with apparent impunity. Does not this farther prove, if proof were necessary, that immediately upon an animal breathing the breath of life, the in-

testines, like all the other viscera, consequent upon such an act, are required, and must instantly fulfil the duties by Nature allotted to them, or that grim agent Death will speedily take possession of that frail body which has but just become the abode of life in one of its lightest forms ?

I rely on your kindness to excuse my trespassing so much on your valuable space, and asking you kindly to give insertion to this case in the pages of as honest a journal as Europe can boast of.

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## ON BLACK-WATER.

*By Mr. W. A. CARTWRIGHT, Whitchurch.*

HAVING had an opportunity recently of making a few post-mortem examinations in cases of black-water, I have sent them to you. It will appear that there were not those morbid appearances in the liver and stomachs, especially in the third stomach, that have usually been deemed the cause of the disease. There might have been constipation, for aught I know, at the commencement, although I have my doubts about it; but I am inclined to think there is still a little mystery connected with the disease, and that it may arise from different causes, not at present fully understood, yet the prevailing cause is probably connected with the food taken in and deteriorating the circulating fluid. It is well known that, in many cases of constipation, there is no black-water, therefore this cannot be always the cause of the disease.

It has not fallen to my lot to treat many cases of black-water, as they are generally doctored by their owners or by druggists; but this I know, that numbers die around me. I never lost but one patient, and that, I may say, was no fault of mine. I never saw, in what we commonly call black-water, any blood mixed with the urine, nor was there in these cases. The livers were little different from healthy ones, and very like many that we see in fat cattle or others that we consider sound. Here and there they were tinted of a clayey colour, and with a few cysts containing a sort of gritty substance; but there was nothing of sufficient importance, one would think, to affect the health, or the quantity of bile secreted, though it is undeniable that, even in these cases, the gall-bladders were distended with bile different in colour and consistence from what we usually find in it. In a state of health the gall-bladder is sometimes very much distended with bile.

I am perfectly aware that in a great many cases, if we can produce purging, our patients get well, or even before that takes

place, and sometimes without it. In the following cases there was not the least staking, but, in my mind, the appearance of the stomachs was perfectly natural. As there was no constipation, and the stomachs were full, to what must we attribute the disease? Are we to say that there was something injurious in what had been in the intestines a few days before, and that absorption had taken place, and vitiated the blood and bile, and so produced death? At any rate, there must have been torpidity in the action of the stomachs, and most probably through the nervous system.

CASE I.—On Thursday, September 22, 1836, I examined a cow that died the night before. About a fortnight previously she was found to be affected with black-water, and thought to be staked. She had a drink administered to her by a person in this town, and was afterwards attended on by a farrier, who gave her several drinks, and, in a week afterwards, she got well so far as the water was concerned, though but little dung came through her during that period, and what was evacuated indicated staking. For the last week, but especially for the last few days, her fæces were as thin as water, but in very small quantities. She ate hay and grass very well; but latterly her appetite failed, she got weaker, and her respiration was hurried. She was a little heavy in her appearance, but did not seem in any pain, or at all uneasy, except that she grunted occasionally. She voided plenty of urine.

*Examination.*—The paunch was full of half-masticated food, hay, grass, and water. The third stomach was full, but the food was soft, and the stomach was sound. The fourth was empty and sound. The whole of the other bowels were inflamed on their mucous coats, and streaked lengthways on their rugæ, just like a riband: the streaks on them were of a black colour. The cortical portions of the kidneys were softer and more tender than in their natural state, and spotted with brown and black. In this case the intestines would appear to be the seat of disease, or, at any rate, the immediate cause of her death.

CASE II.—*Aug. 27th, 1838.* Mr. Cotgreave, of this town, wished me to go and see a cow of his that he was informed was dying in a field, from the effect of black-water. She had been ill since the 22d, and, during that time, he had given her two of Hassall's "cure all" drinks, composed of 2 lbs of salts, 1 quart of linseed oil, 1 pint of port wine, and plenty of gruel.

*Symptoms.*—When I first saw her, she seemed in a dying state, but I was informed that she had suddenly got much worse from having been drenched just before with a pound of salts. She was lying down, and we could not get her up by any manual force, or by enticing her with the calf, but by means of the dog we did do so.



After she had been up some time, I found the pulse from 120 to 130. She was tolerably full, but not at all swollen: in her ears and legs, and all over her, she was warm. The mouth was moist, and I may say in its natural state; the eyes not inflamed, and not yellow, but pale: the respiration was too quick, though little more so than in other cows, as the weather was then very hot. Her urine was and had been most of the time since she was taken ill, of a brown colour, not fairly black, and it was now thought not to be so black as at first.

I raked her, and could feel the third stomach, which did not appear hard, but full: the dung in the rectum was soft, but had a few harder lumps in it.

As I found she had had a great deal of purgative medicine, I felt inclined to go upon the tonic or stimulating plan, and therefore gave her two powders (one immediately), each composed of half an ounce of ginger, two drachms of gentian, and ten drops of croton oil. The other, however, was given in the afternoon. She was then considerably better, getting up without much force being used, and walking about very well.

28th, 8 A.M.—Worse; very weak, and could be hardly got to move. Pulse 100 to 120. Her general appearance was not so very bad, but there was a peculiarity about the breathing, and a great debility. I gave half an ounce of ginger and two drachms of gentian; but at noon she walked round and round very quickly seven or eight times, and then fell down and died.

*Examination*, four hours after death. The paunch had a small wheelbarrow-full of soft food in it. The second stomach contained very little. The third was not full, but nearly so; what was in it was soft, especially towards the centre, and there was no pellicle on any of its leaves or any inflammation. The fourth was empty, and it and the other stomachs were apparently in a perfect state of health. The large intestines were streaked with black, and were blacker than usual throughout their whole extent. A place here and there of the small ones had the same colour, but not to so great an extent, and contained a quantity of mucus. The bladder was full of urine, the colour of porter, not black or thick. The liver was little different from its appearance in health, except being here and there a little paler, or of a clayey colour. The gall-bladder was full of a yellow green bile, as thick as treacle: its mucous coat was not inflamed.

*Kidneys*.—Each of them weighed 2 lb. 3 oz. Their general external appearance on the surrounding adipose matter being removed, was of a dark mottled colour, the blacker and the lighter colour being of nearly an equal extent. The deeper streaks and

spots were of a brown or blackish colour, and the other parts or ground were of a lighter cast, not much unlike the colour of some of the lighter-coloured stone bottles. These separate appearances ran throughout its cortical portion, until we came to the medullary or tubular substance, which was not much different from its appearance in health. It would seem that there was congestion, marked by the dark striæ which the cortical substance contained. Its texture was not at all softened, but, on the contrary, felt tough. A quantity of fluid could be squeezed out of the kidneys everywhere after cutting into them, and which had the same appearance as the urine. The capsule or covering was not diseased. The pelvic portions or central cavities had no mucous lining, nor did they shew any inflammation.

CASE III.—Mr. Cotgreave lost another cow (I did not attend her) a week after this, and which had been grazing in the same field. On examination I found similar appearances in the kidneys, and there was no staking, but in all the dung was soft and natural. There was more discolouration about the intestines and internal parts than in the first case of his. He also had three other cows ill in the same ground within the space of a fortnight, but they got well. The land that these cows had been grazing upon was high and dry, with plenty of water, and the pasture good, although not luxuriant, being bare in some places. The weather had been very changeable, and the winds had varied to almost every point. The owner seems to think that they had nipped the bushes of elm that grew on the ditch bank, and fancied this might have produced the disease.

The other cows had purging medicine given to them, and they did well. To one of them he gave a quart of port wine after the physic. All these were milking cows, in fair condition, but not fat.

CASE IV.—*Sept. 24, 1838.* I have just opened an aged cow that died to-day. She had been ill for about a week. On the day in which her illness was discovered she had a pound of salts, and on the next day a drink from the farrier, and he attended her during her illness, and gave her several opening drinks. Her bowels, however, had not been much moved during the greater part of the time. Her water was bad whenever they saw her void any; but for nearly the last three days they had not seen her pass it; and during that time she seemed as if she wanted to urinate, and could not. She moaned a great deal, and seemed very ill. A day or two after she was taken ill, she got out and went to the pit, and drank a great quantity of water, and afterwards seemed very much swollen, almost to bursting. She ate almost

any thing for two or three days at first, but would not feed during the last two or three. I did not see her alive, but had this account from the owner.

*Examination.*—I opened her in less than an hour after her death. The person that stuck her immediately after she died said that her blood was gone to nothing, but was like the urine she had discharged. The paunch had upwards of a wheelbarrow-full of soft, well-comminuted food in it, mixed with a great deal of water. The second stomach had a little liquid fæces in it. The third stomach was not above half full, and what was in it was very soft. There was not the least vestige of disease or discolouration either in this or the other two preceding stomachs. The fourth stomach had nothing in it but a small portion of liquid fæces. It had a very unhealthy appearance, being of a smoky or blackish cast, and the reflections or plaits were somewhat thickened, and infiltrated with serum.

I did not examine the interior of the intestines, although I ought to have done so; but to all appearance they were sound.

The left kidney was of a similar colour to those of Mr. Cotgreave's cows, but not quite so distinctly marked. The spots were much smaller. It was a very plump one, and seemed enlarged. The right kidney had a tumour which occupied the space of one of its lobes, and contained nearly an ounce of clear serous fluid. Its covering resembled a thin bladder. One of the other lobes, at the opposite end, was of a much lighter colour. It contained a little fluid, and appeared almost as if absorption of its substance was taking place, and a cyst was forming, like that just mentioned. Its texture was very different to that of the other kidney, and did not seem as if it secreted properly. In some of its tubes I found small calculi half the size of a pea. Each of these kidneys (especially the left) was much infiltrated with a fluid similar to that in the bladder, and which could be easily squeezed out. This kidney (the left) did not seem red or inflamed, but presented more an appearance of softening and congestion, and almost approaching to disorganization. The bladder contained about a pint of urine of a dark brown colour, but scarcely thicker than usual: the bladder itself was sound. The gall-bladder was sound, but filled with about three pints of bile of a brown colour, and as thick as treacle when melted. The liver was as sound as it generally is.

The Lungs:—In two places at the posterior extremity of one of the lungs there was a great deal of disease; indeed, there was complete disorganization, as matter was forming in points almost all over these places, and extending in patches as large as a hand. These patches had a distinct line of demarcation between them and the sound portion, and I fancy had little if any thing to do in producing her death, or perhaps even any recognizable illness

when she was alive. The pleura covering these diseased portions seemed not to be quite free from disease. The general cellular tissue had no jaundiced appearance.

The owner of this cow has had one ill since of the same disease, and which recovered under my treatment. He says he has lost one or two every year, from the same complaint, for twenty years past. They have fed on the same land, which is low, and at nights has a fog generally hanging over it.

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## ON THE FREQUENT PRESENCE AND EFFECTS OF PUS IN THE BLOOD, IN DISEASES ATTENDED BY INFLAMMATION AND SUPPURATION.

*By* GEORGE GULLIVER, *Esq.*, *Assistant Surgeon to the  
Royal Regiment of Horse Guards.*

IN the prosecution of an inquiry in which I have been long engaged concerning inflammation and suppuration, I soon perceived the necessity of instituting a careful examination of the blood in these affections, and particularly in the different forms of inflammatory fever and hectic.

The result has been the detection of pus in the blood in almost every instance in which there was either extensive suppuration, or great inflammatory swelling without a visible deposition of pus in any of the textures of the body: and the contamination of the blood by pus appears to me to be the proximate cause of the sympathetic inflammatory, sympathetic typhoid, and hectic fevers. Since the writings of Dr. Lee, Mr. Lawrence, Mr. Arnott, and of MM. Velpeau, Dance, and others, the profession has become familiar with cases in which pus has been found in the veins, particularly after surgical operations, and in uterine phlebitis; but although the humoral pathology has of late years begun to assume some of its ancient importance, I am not aware that any writer has attempted to demonstrate the dependence of the fevers under consideration on the presence of pus in the blood.

Previous to a brief notice of some of the experiments and observations from which the results have been drawn, it may be proper to mention the means by which I have detected pus in the blood. The examination was very simple,—partly chemical, and partly by the aid of the microscope. Those who are acquainted with the minute constitution of the animal fluids are aware of the rapid and energetic action of water on the blood-corpuscles: now



the globules of pus undergo no change after having been long kept in water; accordingly, if the suspected blood be mixed with this fluid, the blood-corpuscles will soon become invisible, and any globules of pus that may be present will subside to the bottom of the vessel, and may be easily seen, and their characters determined, with a good microscope. Ammonia instantly renders the blood-corpuscle invisible, while that of pus is acted on but slowly by the alkali; and the different action of acetic acid on pus and blood is equally remarkable. Hence I have employed these agents advantageously in conjunction with the other means; and I have also seen pus-globules in the blood, though rarely, without any preparation. With water, however, the examination is most easy, simple, and satisfactory, if the observer is thoroughly familiar with the microscopic characters of the fluids under examination. A good instrument, nevertheless, is necessary; and the admirable deep object-glass of Mr. Ross is the one I have principally employed. It is hardly necessary to add, that chyle-globules are not likely to be mistaken for those of pus, since, independently of other distinctions, the medium diameter of the latter is at least  $\frac{1}{2666}$ th of an inch, which is above twice that of the former.

*Exp. 1.*—A weak solution of corrosive sublimate was injected into the subcutaneous cellular tissue of a dog's thigh: great swelling of the limb took place, and he died forty-five hours after the injury. A good deal of serum mixed with fibrine was found in the cellular tissue of the thigh, but there was no purulent deposit.

Several pus-globules were detected in some blood obtained from the right ventricle of this dog's heart.

*Exp. 2.*—A large dog had both his tibiæ injured by some operations connected with necrosis: great swelling of the limbs, with violent fever, succeeded, and he died forty-three hours subsequently.

A large quantity of fibrine was found diffused into the cellular tissue of the extremities, mixed, in one of them, with a very scanty proportion of purulent matter.

In some blood, obtained from the vena cava, numerous globules of pus were observed.

*Exp. 3.*—An irritating fluid was injected into the peritoneum of a dog: he had great thirst, refused food, and died on the third day after the operation.

A large quantity of coagulated lymph and sanguinolent serum with some pus was found in the belly.

In some blood obtained from the inferior cava vein many globules of pus were seen.

*Exp. 4.*—Two ounces of pus were injected into the left pleura

of a dog, and very carefully confined there : he was thirsty and feverish for fifty-five hours after the operation, when he was killed.

An ounce of fluid, almost entirely serum, was found in the pleura, and some fibrinous exudation on the membrane.

Blood from the heart, as well as from the vena cava, was examined, and found to contain several pus-globules.

*Exp. 5.*—Four ounces and five drachms of pus were injected into the peritoneum of a dog, and the wound carefully closed : he died thirty-seven hours after the injury.

There were only nine drachms of a sero-sanguinolent fluid found in the peritoneum, and a considerable quantity of coagulated lymph on the membrane.

Pus was detected in the blood.

*Exp. 6.*—Half a drachm of pus, mixed with half an ounce of water, was gradually injected into the crural vein of a dog.

Some fever followed, and he refused solid food for two days, but recovered at the end of a week.

The same quantity of pus was soon afterwards injected into the other crural vein, when similar symptoms were produced, and he perfectly recovered in a few days.

*Exp. 7.*—Six drachms of pus having been injected into the crural vein of another dog, he was not much affected at first, but in a few hours became very weak, was stupid, thirsty, and refused his food. After thirty hours he took but little notice of surrounding objects, his respiration was hurried, and he died thirty-six hours after the operation. In the blood of the inferior cava some pus-globules were readily detected.

CASE I.—A girl died of confluent small-pox on the ninth day of the disease. There was great swelling of the integuments.

In the blood of the right ventricle numerous pus-globules were found.

CASE II.—A woman had confluent small-pox, uncomplicated with erysipelas or inflammation of the viscera.

On the eighth day of the disease, some blood was drawn from a vein in the arm : several pus-globules were found in this blood.

CASE III.—A male child, æt. 15 months, died on the ninth day, of small-pox. Only a few pustules appeared, and these were imperfectly developed : there was considerable swelling in the face, slighter in other parts.

At the post-mortem examination, it was observed that a small quantity of a white opaque fluid might be squeezed from the cut surfaces of the lymphatic glands of the neck and groin : this fluid had the microscopic and chemical characters of pus.

In some blood obtained from the right ventricle and from the inferior cava vein, pus was detected.

CASE IV.—In a woman who died of puerperal peritonitis, the peritoneum contained a large quantity of coagulated lymph, serum, and purulent matter.

Pus was detected in the blood obtained from the right ventricle of the heart.

CASE V.—James Green, æt. 27, was admitted into the hospital with an ulcer of the leg. Seven days afterwards, the limb began to swell, and there was hardness of the femoral vein, with some redness in the course of the absorbents on the inner side of the thigh. The swelling of the limb increased gradually: he had first pain in the head, thirst, and quick pulse; then purging, pain in one wrist, with restlessness, incoherency of speech, and offensive breath: finally, low muttering delirium, accelerated respiration, and coma, preceded his death, which took place on the twelfth day after his admission into hospital.

At the post-mortem examination, the large veins of the limb were found to be occluded throughout by firm clots of blood, mixed with pus and coagulated lymph, and the lining membrane of the femoral vein was in many places of a red colour, and coated with fibrine. In the iliac vein no such signs of inflammation appeared, although there was a large coagulum of blood, which had lost its red colour, containing in its centre a small quantity of matter resembling pus. Several purulent deposits presented in the sheath of the femoral vessels, and in the intermuscular cellular substance.

The matter resembling pus in the clot of the iliac vein had neither the chemical nor microscopical characters of that fluid.

In some blood obtained for examination from the right ventricle, and from the vena cava, numerous globules of pus were found.

CASE VI.—James Hawke, æt. 22, had a superficial wound of the tibia, followed quickly by considerable pain and swelling. There was a very scanty deposit of pus in the subcutaneous cellular tissue. The swelling of the limb increased and extended rapidly, the integuments becoming discoloured, and the slight supuration ceasing. His dissolution was preceded by subsultus, collapsed face, accelerated breathing, hiccough, and coma.

The swelling of the limb was found to be produced by effusion of fibrine and sanguinolent serum. A few pus-globules were found in the blood obtained from the vena cava.

CASE VII.—M. Jackson, æt. 42, had erysipelas of the face, which decreased, and was succeeded by jaundice and effusion into the pleura. He became listless and low, with accelerated respiration, and died six days after the appearance of the erysipelas.

An ounce of turbid serum, with a little purulent matter, was found in the right pleura, and eight ounces of sanguinolent serum in the left.

Some blood was obtained for examination from the larger veins, and found to be greatly contaminated with pus.

CASE VIII.—Sergeant Dunn, æt. 29, had profuse suppuration between the muscles and beneath the integuments of the thigh : he died, after some weeks' suffering, exhausted by hectic.

The purulent matter was extremely offensive, putrefying with great rapidity, and sometimes coagulating spontaneously, when set aside for a short time. It was poor in true pus-globules, but contained a large quantity of flaky fibrinous matter, to which its opacity was chiefly owing. Many pus-globules were found in the blood obtained from the right ventricle.

CASE IX.—Wm. MacLean, æt. 19, died of pulmonary consumption. In his lungs were several vomicæ, containing pus and softened tubercular matter.

In the blood obtained from the vena cava and right ventricle many pus-globules were found.

CASE X.—A man had irritative fever, in the Marylebone Infirmary, consequent on a large abscess behind the trochanter femoris.

An ounce of blood was drawn by cupping from the neighbouring sound parts, and some pus was detected in this blood.

CASE XI.—An officer's charger died with vomicæ and tubercles in the lungs, and sero-purulent fluid in one pleura. Some time before his death, his respiration and circulation were much accelerated.

The vomicæ contained pus mixed with gangrenous sanies.

In the blood obtained from the vena cava, inferior pus was detected.

The preceding instances by no means comprehend the whole number in which I have found pus in the blood. In the detail I have rather been anxious to give examples of interesting varieties, than to increase the number by needless repetitions.

It is satisfactory to add, that the observations of Dr. Davy tend to confirm the accuracy of those which I have just related. He detected pus in the blood of consumptive patients, after my general results had been submitted to him, but before I had turned my attention to the state of the blood in phthisis. He has lately informed me that he has found pus in the blood in seventeen instances after death, in sixteen of which there was declared suppuration, and in one none could be detected : in the latter, the patient died of acute inflammatory disease.

Before considering the conclusions to be deduced from the pre-



ceding observations, it may be proper to advert briefly to the nature and use of suppuration, although I shall have occasion to bring forward the evidence on matters of opinion in a more systematic form in a future part of these researches.

Since the microscopic observations of Mr. Hunter, Sir Everard Home, and Mr. Bauer, the opinion has often been expressed in this country, that the globules of pus are nothing but those of blood, modified by the inflammatory process. I believe Sir Astley Cooper and the late Dr. Young came long ago to this conclusion. Finally, on the continent, M. Gendrin, without much regard to the observations of English pathologists, adopts precisely the same theory, supported indeed by a series of very ingenious experiments, which have been generally considered conclusive on this subject.

I have repeated the experiments of M. Gendrin with great care, and although I see no reason to dissent from that part of his conclusion already stated as having been long since advanced in this country, I have not been able to observe the phenomena related in his work. It seems not improbable that M. Gendrin was influenced by the erroneous views of M. Milne Edwards as to the globular structure of fibrine; for M. Gendrin states in one place, that pus is but a modification of fibrine, although in others he informs us that it is a transformation of the blood-corpuscles that constitutes suppuration. By cauterizing the web of a frog's foot under the microscope, or by elevating on the polished blade of a lancet a film of the edge of a wound previously made in the part, he assures us how easy it is to see the blood-particles gradually transformed into those of pus. I regret to say that I have not been able to succeed in this observation, because I found, after repeated trials, that I could not by any means induce suppuration in batrachian reptiles.

With regard to the conversion of clots of fibrine into pus, some experiments render it extremely probable that the matter often found in the centre of such clots in the heart and great vessels is nothing more than softened fibrine; and which, although it resembles pus in some particulars, presents neither the chemical nor the microscopical character of that fluid. I have seen nothing like pus-globules in the softened fibrinous clots of the heart; and the rounded particles which sometimes occur in softened coagula of veins are probably the remains of blood-corpuscles. The conversion of the latter into those of pus is extremely probable, and it is equally probable that this change may take place either in the capillaries or out of them. In the former case, after the stagnation of the blood in these vessels which preceded the suppurative process, as the clot softened and the pus became mature, it would be carried

into the circulation, and hence its presence in the blood independently of wounds or abscesses.

In instances of idiopathic or traumatic phlebitis, the manner in which the pus may become mixed with the blood is obvious enough. There is a class of cases to which the latter appellation is commonly applied, which are probably not examples of inflamed veins. They seem rather to be of an opposite nature; for I have seen large veins, which had been divided many days before death, containing purulent fluid, although their inner surfaces presented no marks of inflammation; and the total failure of this process in them would seem to have left open their wounds, so as to favour the entrance of pus into them from the neighbouring parts: and this consideration would involve an important point of practice.

It might be asked if, on a suppurating surface, the pus-globules, considerably larger than those of blood, escape from the capillaries, how comes it that the latter particles do not escape as well? To which it may be answered, that the discharge of the pus-globules is preceded by the coagulation of the blood in these vessels; and that their closure, where there is a breach of continuity, is provided for by the formation of the clot keeping pace with its decomposition during the suppurative process; and the blood-corpuscle, reduced in size by being broken down, or by losing its external part, may escape, and still become enlarged out of the vessels from the addition of new matter, till it assumes the character of a true pus-globule: hence its larger and more unequal size and irregular surface than the blood-corpuscle.

I think my experiments will render it probable that suppuration is a sort of proximate analysis of the blood. As the effused fibrine produces swelling, or is attracted to the contiguous tissue for the reparation of injury, the blood-corpuscles, altered by stagnation, become useless, and are discharged in the shape of pus, as waste from the system. Suppuration, therefore, would appear to be a physiological rather than a pathological phenomenon—pus being an excrementitious discharge—a part of the blood which has become effete and noxious during the reparative process, whether this process may have been employed in limiting the extent of an abscess or in healing breaches of continuity. If, however, there should be a formation of pus in the capillaries in consequence of the stagnation and coagulation of their contents, this pus might be mixed in large quantities with the blood in cases where there was no declared suppuration, as in some of the examples brought forward in this paper.

With regard to the correct observation of Müller, that the smaller capillaries have only the diameter of a blood-corpuscle, I shall on a future occasion shew, from the result of experiments, that these

vessels become sufficiently enlarged during inflammation to contain a row of pus-globules.

If it should be remarked that pus is often formed without any obvious addition of fibrine to the neighbouring parts, it should be recollected that this is not a healthy, but a diseased form of suppuration; and the distinction and explanation are not difficult. In the formation of the unhealthy pus in question, the fibrine is broken down, mixed, and excreted with the pus; and hence the flaky, curdy appearance of such matter, its proneness to putrefaction, and the cases cited by some authors as instances of suppuration without inflammation, and the old term, "badly matured matter." Independently of the paucity of true pus-globules in this kind of discharge, with the abundance of flaky particles, its tendency to putrefaction would afford strong proof of its containing fibrine but little changed in its composition; for of all the animal fluids, pus is, probably, that which resists putrefaction with the greatest pertinacity. The eighth case, that of Dunn, is but one among many that I could cite in illustration of these observations.

It remains to deduce the conclusions from the experiments and observations related in this paper.

The term suppurative fever is not new, and its signification is probably now extended; for it seems to be an appropriate one for the different forms of constitutional disturbance under consideration. If the presence of pus in the blood and the fever in these cases be not related as cause and effect, the coincidence would appear to be no less interesting than remarkable.

What a field of inquiry does this view open to us? Henceforth, whenever a patient is affected with inflammatory fever, or that low typhoid state which is so generally a forerunner of death, as a consequence of traumatic or idiopathic inflammation, the state of the blood will present an interesting subject of investigation. And this is not merely a matter of curiosity; for the question will arise, whether, in the treatment of such cases, it would not be advantageous to produce suppuration as soon as possible on the surface of the body, so as to establish a drain by which the blood might be deprived of the offending matter. It may be asked also, whether the benefit so often effected by blisters, setons, &c., in certain internal inflammations,—or by incisions, which cause suppuration in inflammatory affections of the integuments, be not explicable by this theory? It is well known that, in cases of traumatic or idiopathic inflammation, attended with great swelling and febrile excitement, the establishment of suppuration in the part is generally a favourable symptom, the separation of the pus from the blood being a sort of crisis to the symptomatic fever. In small-pox, it is a popular belief that "the striking in," as it is



termed, or suppression of the pustules, is a bad symptom; and this is so far true, that the worst cases of this disease are those in which there is great swelling of the integuments without the due formation of pus in the usual situation. In every instance in which I have examined it, I found pus in the blood of patients affected with small-pox.

In the fourth and fifth experiments the pus which was injected into the serous sacs would appear to have been absorbed. A more careful inquiry, however, would be requisite to warrant this conclusion; for, in some experiments made by Dr. Davy, the quantity of matter injected seemed to be increased; and I have since made an experiment with the same result.

The absorption of pus being the cause of hectic fever is an old hypothesis, which the detection of pus in the blood in cases of chronic abscess and in pulmonary consumption might be supposed to confirm. It does not seem necessary, however, to assign two causes for one effect. When pus in large quantities is incessantly forming in the capillaries, it is easy to imagine how it may become mixed with the blood.

I have related instances of pus in the blood, independently of suppuration out of the vessels: this fact appears to be of some importance, for it must be inferred that the pus was not absorbed, but formed in the blood.

If it be objected to some of the foregoing views, that pus and extravasated blood are often absorbed without any ill effects, and that no constitutional disturbance may ensue after inflammation and the consequent effusion of fibrine, it may be remarked, first, that pus and blood are probably absorbed in a modified state; and, secondly, that a small quantity of pus, like other poisons, gradually added to the circulation, may not be productive of bad symptoms. The sixth and seventh experiments may be cited in illustration. It is probable that the degree and type of the fever induced by the presence of pus in the blood may be found to depend on the extent to which it may be contaminated.

Of the inflammatory, hectic, and low typhoid fever, it seems hardly necessary to observe, that they appear to be all comprehended under the common designation of constitutional irritation in the interesting work of Mr. Travers, which I had not read till my attention was directed to it by Mr. Liston after this paper was written. Under the term typhoid, I have included that grave form of fever in which the vital powers sink rapidly, as I believe, from somewhat sudden and extensive mixture of pus with the blood, as sometimes occurs after operations on veins, or amputations, or even independently of wounds. The patient seldom complains of much pain; he has, among other symptoms, dilated nostril, flushed face,



encrusted tongue and teeth, restlessness, small quick pulse, cold clammy sweats, offensive breath, hiccough, subsultus, stupor.

I cannot conclude this paper without expressing a hope that it will lead to a still more careful and extensive examination of the blood in various diseases than has hitherto been attempted. The microscope may become as important an instrument to the pathologist, and even to the medical practitioner, as the stethoscope. If my results should be confirmed, it is hardly too much to expect that some important discovery, particularly in diagnosis, may be made by a patient investigation of the blood in many malignant diseases, such as cancer: it is not long since the urinous fever, as it is called, was found to depend on the accumulation of urea in the blood.

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## REMOVAL OF A TUMOUR FROM THE PENIS OF A BULL.

*By Mr. HICKMAN, Shrewsbury.*

Mr. MEREDITH, of Uppington, in the county of Montgomery, a highly respectable farmer and a great agriculturist, purchased a valuable bull of the pure Hereford breed, for forty-nine pounds. In the early part of last autumn he observed an enlargement round the end of the sheath, and a great deal of discharge from it. He had the parts well washed every day for some time; but the discharge did not decrease or the swelling get less. He then called in a veterinary practitioner from Welshpool, who ordered a solution of sulphate of zinc to be applied daily, which was continued about two months, without any benefit to the animal.

Mr. M. then requested me to come to his house and examine the parts, which I did on the 26th of December last. On making my examination, I discovered an enlargement upon the end of the penis, about the size of a walnut, and the external surface very much resembling the shell: it was remarkably tender, and when the bull was loosened out of his box to a cow he did not shew his usual desire, nor did he ever attempt to draw his penis. I told Mr. Meredith the only mode of relief would be to remove the substance by means of the knife. Mr. M. had a very great objection to this, because he fancied it would render him incapable of serving the cows, and he would then be a great loser, after giving so large a price for him. In this opinion he was strengthened by several farmers who were present. I repeated, that I could do nothing that would be of use in any other way than the removal of the tumour.

Mr. Meredith consulted the gentlemen present, and it was finally

agreed that the bull should be fed, and made the most of by selling him. I then said "If you intend him for the butcher, he will be worth quite as much after the operation, and very likely feed better, as the pain and tenderness of the parts now tend very considerably to harass him." I further said, that I would hold myself responsible for the animal's life as regarded the safety of the operation, with a proviso that I would have nothing for my trouble if the bull did not get stock afterward, and that my fee would be so much if he did: this argument had its effect, and Mr. Meredith consented to my proposition.

I procured six or seven men, and with a new waggon-rope succeeded in casting him, and secured him in the manner I would a horse for castrating. The bull being of an immense size, and very savage, we had a great deal of trouble, and were exposed to no little danger in getting him down.

I intended to have drawn the penis to the end of the sheath and remove the tumour, but the muscles contracted so very powerfully that, after many attempts to do so, I was obliged to relinquish that plan. I therefore passed a staff into the sheath, and cut down upon it, over the part to which the end of the penis reached. I was then enabled to draw out the penis with the tumor, and removed it, with about two inches and an half of the penis. The incision in the integuments, which was about six inches long, was brought together by sutures, and the bull released: no dressing was afterwards applied, as it was impossible for any one to approach him. The sutures sloughed away in about a fortnight.

Uppington being a great distance from Shrewsbury, I did not see him a second time; but in six weeks after the operation he was loosed into the fold to a cow, which he served, and the whole of Mr. M.'s cows (sixteen in number), as well as some of his neighbours, are now in calf by the same bull.

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## A CASE OF CHOKING IN THE HORSE.

*By Mr. GEORGE HOLMES, Thirsk, Yorkshire.*

ON the 29th of September, I was sent for in great haste, to attend what was said to be a very urgent case at Ashbury House. I found my patient, a horse, in the most distressing state, breathing with the greatest difficulty, heaving violently at the flanks, and the countenance exhibiting an expression of the intensest agony. He was foaming at the mouth, the ears cold and lying useless on the head; in fact, it was evident, that unless instant relief was afforded

him, he must die. On hastily inquiring what all this was about, I was told that a ball had been given to him a little while before, and which, it was imagined, had stuck in his throat.

I immediately proceeded to examine him, but the ball was not to be detected in the cervical portion of the œsophagus. In my own mind, I was convinced that it was in the fauces, or pressing upon the larynx, but the violent heaving of the poor fellow, and the instant suffocation that threatened when he was moved in the slightest degree, precluded any attempt to pass the probang: I therefore determined on immediate tracheotomy. It was but the work of a few seconds to open the trachea, and to insert a bent tube, with which I am always provided. He experienced instant, although very far from perfect relief.

I allowed him a little time to recruit his strength, and then endeavoured to introduce a probang into the gullet. I experienced a great deal of difficulty in accomplishing this. The obstruction was where I suspected, viz., at the commencement of the œsophagus. After repeated attempts, however, I did remove the ball.

I then bled him, and administered an aperient ball. Still the animal continued to breathe very laboriously, and I suspected that a part of the ball had passed into the trachea, and perhaps into the bronchi, and I feared that, after all, my patient would be lost. The pulse remained rapid and hard, and was fully 100; I therefore, before I left him, practised a second bleeding, and ordered two scruples of opium and the same quantity of digitalis to be given every three hours.

This medicine had an admirable effect in allaying the extreme irritation that had been for so long a time going on. In about fifteen hours after the operation, all unfavourable symptoms had vanished; the appetite and spirits returned, but the horse was kept under a restricted diet for awhile. The wound in the trachea quickly healed, and the animal now continues as well and as fresh as he ever was.

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## A CASE OF DISLOCATION AND FRACTURE OF THE SPINE IN A HORSE, FROM A FALL.

*By Mr. T. DARBY, of Louth.*

Mr. NAULL, of this place, lent a very valuable hunter to a friend for a day's sport with Lord Yarborough's hounds. In the course of the day he threw his rider, a very good one, and made for his stable at a most tremendous rate. When he got into the town he fell twice heels over head, and came, each time, with his

back on the curb stone. After he had been home about an hour I saw him. The grooms were fomenting him with hot water.

On looking over him, I found all four legs a good deal injured, and there was a considerable wound on his withers. I ordered the fomentation to be continued three times during the night, and gave him five drachms of Cape aloes, with one drachm each of powdered opium and tartarized antimony, made into a ball with linseed meal.

It would have been thought that such injuries as these would have indicated copious bleeding, but the pulse, so far as I understood it, had told me not to bleed, for I could scarcely feel it, and when I could perfectly recognize it, it too much resembled that of the horse sinking under influenza.

On the following day the pulse was the same. The withers were excessively swollen. I punctured them freely and deeply, and a considerable quantity of blood escaped. The fomentations were continued during the day. The withers were dressed with a digestive ointment.

On the third day the horse did not appear to suffer much, but he had become exceedingly feeble. He dunged and staled pretty well.

On the fourth day I inserted a rowel into his chest, and likewise passed setons downward from the mouth of the wound in the withers. The fomentations and dressings were continued, and I gave him two drachms of aloes, and one each of opium and tartarised antimony.

On the fifth day the pulse still continued the same. The stench from the wound was dreadful. I dressed it several times during the day with a solution of chloride of lime, and told the owner that I had no hope whatever of saving him.

He lingered on until the seventh day, when he died.

On opening him on the following morning, we found the third dorsal vertebra dislocated, and several of the processes of the spine were broken, although the skin was not injured externally. The right lobe of the liver was in a complete state of rottenness, so much so that it would scarcely bear taking out. It was of a pale, clay colour. The other abdominal organs seemed to have suffered very little. Am I to attribute the peculiarity of the pulse to the diseased state of the liver?



## THE VETERINARIAN, JANUARY 1, 1839.

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*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

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THE increasing length and value of the Essays and Debates of the Veterinary Medical Association—the press of matter which, within the last month or two has crowded upon us, in consequence of the anticipated near approach of that period when our veterinary school will assume its legitimate character, and work out all its first-intended, noble objects—the kind promises of many of our correspondents to yield a warmer support to that periodical which, with all its deficiencies, is identified with the best interests of our profession; and, last, and not least, the urgent solicitations of many valued friends, have induced us to increase the size and price of our Journal. It will in future consist of one hundred pages, with more numerous engravings than it has yet contained.

We think we can pledge ourselves that the present will be a fair and faithful specimen of what THE VETERINARIAN will in future be.

Its progress has been slow, but satisfactory, as to its ultimate triumph.

The Editor is little seen in the present number. There was no room for him. His place was occupied by one whose name is dear to every member of our profession; and of the high value of his present communication, there will be but one opinion. Often may he

“Rise again,  
And push us from our stools.”

There was no room for the Editor, nor for several valuable correspondents, although the number was enlarged by twenty pages. It is his intention, however, in most of the following numbers, in all of them, indeed, unless he should be again shut out by the kindness of his friends, to insert a continuous series of Essays on the Comparative Anatomy of our increasing varieties of patients. They will not interfere with the more scientific lectures of Mr. Spooner. The plan has received his kind sanction. They may prepare the future pupil for the better instruction to which he will hereafter

have access; and this may recall to many an old pupil the memory of by-gone days, as pleasant, we trust, to him as to his old preceptor.

By binding the Journal and the Association in separate volumes, the bulk of the whole will not be inconveniently increased. The account of the Association commenced in the volume for 1837.

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ON the 18th ult. the half yearly meeting of the English Agricultural Society was held. The rooms were crowded. The most perfect harmony prevailed, and every one seemed to feel assured that the important objects of that society will, at no great distance of time, be fully accomplished. We subjoin that portion of the "Report" which had reference to us.

"Aware of the immense loss sustained in consequence of the want of better knowledge in the treatment of the diseases of cattle, sheep, and pigs, the attention of the Committee has been turned to this subject, in order, if possible, to devise means for supplying the deficiency. A veterinary school has long been established in the neighbourhood of the metropolis, and it has been most useful in teaching the scientific and successful treatment of the diseases by which thousands of horses used to be destroyed; but its attention has been almost exclusively devoted to the horse. It was, therefore, considered that if its labours could be directed with the same success to the management, in health and disease, of our cattle and sheep, it would be of inestimable advantage to the British farmer.

"Application has been made to the Governors of the Veterinary College, stating the anxious wish of the English Agricultural Society, that this most important extension of its inquiries and its benefits should take place, this Society not interfering with the arrangements or proceedings of the Governors of the College, but contributing from its funds to the accomplishment of this purpose.

"A most favourable answer has been received from some of the Governors, and a meeting will soon take place between them and a delegation of your Committee, from which the happiest result may be anticipated."

We trust that the ultimate result will be a happy one;

but the question will be as to time and arrangements. It will not be the fault of the Society if the time is not almost immediate; and the arrangements such as to gratify every one who wishes well to the St. Pancras School, and to the veterinary art.

They who are at the head of the Agricultural Society—the moving powers of it—are well aware of the magnitude of the object which they have pledged themselves to accomplish; they are aware of their responsibility to the whole agricultural body, and to their country; and they will do their duty.

*They will fully accomplish their object*—at the St. Pancras school if they can. There they would rejoice to accomplish it. We trust that no delusive plans will be proposed—no half measures attempted; but that with good faith, and the kindest feelings, all parties will unite.

We were much gratified to hear Mr. Sewell, at the close of his introductory lecture, in November last, express himself so warmly and so properly with regard to this most desirable extension of the students' education. He spoke of the hope with which the agriculturist was inspired, that the benefits of our art would be extended to every animal that formed a part of the wealth of the farmer and of the country. He alluded to the circumstances which, without much impeachment of industry or good intention had prevented the full working out of the plan of the founders of the Veterinary College, but which should no longer exert any baneful influence, or, indeed, have existence. He placed the question on its proper grounds, the interests of the agriculturist and the country, the claims of humanity, and the honour of the veterinary profession. He expressed himself willing to contribute, to the full extent of his power, to the accomplishment of what now appeared to be the general wish, the general demand.

This was as it should be. The Professors and the Governors of the Veterinary College may be assured, and, we trust, are beginning to see, that every branch of veterinary instruction must now be placed on its true level. No portion must be omitted—no portion considered as merely subsidiary to others—glanced at, now and then, and that somewhat too rapidly, and then heard no more of for weeks. Each must occupy its full time—each must receive its

full and due attention. If the avocations of the present Professors will not admit of this, others must be added. And is there any thing unreasonable in this? Ours has been the only school in which the instruction of the pupil has been thus confined: ours is the only school that has but one professor, and an assistant-professor. Look at the medical schools around us—look at the veterinary schools in every country in Europe. Four, five, six talented men are, in all of them, employed in preparing the student for the efficient exercise of his profession. Where is the reason that, in Great Britain alone, unrivalled for its horses, its cattle, and its sheep, the veterinary student should be more inefficiently taught than in any other country in the world? Common sense, common justice, and common interest will now unite many honourable minds in commencing that career of improvement which will gradually, cautiously, and in good faith be pursued until the reputation and honour of the practitioner, and the peculiar interests of the farmer, are secured.

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## COMPTE RENDU OF THE TRANSACTIONS OF THE ROYAL VETERINARY SCHOOL AT ALFORT, DURING THE SCHOLASTIC YEAR 1837-8.

### HOSPITALS.

*Professor* . . . . . M. RENAULT.

*Assistant Professor* . . . . . M. BOULEY.

DURING the session which has now terminated, 638 animals of different species have been received into the hospital; namely, 418 horses, 3 cows, 1 ass, 1 mule, and 213 dogs.

Of the 418 horses, 320 were dismissed cured, or very materially benefitted, 39 are at present in the infirmaries, 33 died after treatment of a longer or shorter duration, and 26 were destroyed, either because they were manifestly incurable, or the treatment, the result of which was more or less uncertain, would necessarily occupy a space of time that would render the expense far greater than their worth. Of those that were condemned as being in an incurable state, the greater part were either farcied or glandered.

Of the 215 dogs, 144 were discharged perfectly cured, or in a very favourable way; 32 remain under treatment, and 39 have died, the greater part of them labouring under distemper.



The mule is still in the infirmary; but the ass is dead. Two of the cows were successfully treated, but the third died.

Independently of these animals that were received into the hospital, 2137 were brought to us for advice, namely, 1996 horses, 99 dogs, 15 asses, 5 cows, 5 mules, 2 sheep, and 4 goats. The greater part laboured under some external or internal disease, and the others came to be examined previous to purchase, or because some dispute had arisen between the buyer and the seller. With regard to each of these animals, the professor, or the assistant professor gave his advice orally or in writing, and surgical operations were performed on a great many of them. Therefore in the hospital or in the yard attention was given to 2765 animals in the course of the year.

In addition to this, the students of the fourth year attended 206 patients in the environs of Paris.

Every new experiment tried this year regarding the cure of CHRONIC GLANDERS has confirmed M. Renault in the opinion which he had already avowed, as to the *incurability* of that disease, and the necessity of directing the chief or only attention to preventive measures when attending the stables that have been thinned by this pest, rather than attempting any curative means which the careful and anxious experiments of so many years have failed to discover.

As to FARCY, a disease which M. Renault has always considered as identical with glanders, or differing from it only as seated in the superficial part of the animal, the results of this year's experience have proved that it is generally curable when it has only appeared under the form of buttons, or cords, or circumscribed tumours, and the lymphatic ganglionic system has not been affected. In these cases the extirpation or cauterization of the parts, whether employed singly or in conjunction with each other, have been the most efficacious measures that we could adopt; but in connexion with these local measures, we have always had recourse to the aid of medicine and proper diet.

We will not omit on this year, as we have not on preceding ones, the wish to see undertaken on a grand scale a series of experiments on the contagion of *chronic glanders*. The government, which has at length felt the necessity of obtaining a conclusive answer to this question, so important to the interests of agriculture and the army, has named, in order to direct and to follow out these experiments, a commission, over which a lieutenant-general presides, and which reckons among its distinguished members a fellow of the Institute, and also M. Yvart.

M. Renault, who occupies the situation of the latter distinguished individual at this school, is enabled to state that,

hitherto, these experiments are confirmative of those which have been long conducted at the school of Alfort, and which are still continued there; namely, that *chronic glanders* is not contagious.

As to *acute glanders, even under the pustular form*, and which the greater number of veterinary surgeons believe to be contagious, the observations made in our hospitals concur with those that have been recorded in former years, in throwing considerable doubt on the propriety of that conclusion.

The experiments commenced some years ago on the contagiousness of rabies have been carried on during the session which has closed. M. Renault has been led to believe that this poison loses its contagious properties after a certain number of inoculations. New facts, which have been elucidated during the preceding year, have confirmed this opinion. Several dogs have been placed in our hospitals under the suspicion that they had been bitten by others that were rabid. When the disease became developed in these animals, two dogs and a horse were exposed to inoculation from them. Ten months have passed, and rabies has not been developed in either of them. M. Renault contents himself at present with the announcement of these facts; and awaits the result of other experiments before he pronounces a decisive opinion on a subject of so much importance.

There is a disease which is often found in the establishment of post and coach masters, and also among horses of burden. It appears to have its seat exclusively in the blood, and to consist in an impoverishment of that fluid. An examination of the horses that die of this disease does not discover any important lesion in any of the thoracic or abdominal viscera, except a remarkable paleness of them all, with the exception of the spleen, the substance of which, under a slight pressure, is softened into a black pulp.

During the life of the animal the disease is chiefly characterized by an engorgement of the lower extremities, resulting from the tendency of the blood, in consequence of its liquidity, to descend as far as it can.

This fearful affection, considered in many localities as a species of fever, and the true nature of which was first discovered by M. Renault, was formerly exceedingly fatal; but the treatment which he recommended, in consequence of what he observed in our hospitals during the last two years, has considerably arrested its deadly course. It consists in the practice of small bleedings daily repeated, combined with the employment of substantial and strengthening food, and the administration of tonic and stimulating medicine.

The local engorgements must be combatted by the application of the pointed cautery, deeply penetrating into them, and the suppurative discharge which is excited being long continued. Neglect of this last circumstance is occasionally attended by very serious consequences. Indeed, it is not rare to observe, at the moment when the suppuration begins to diminish and the convalescence of the animal appears to be assured, a sudden metastasis of disease, either to the lungs or the pleuræ, or the subcutaneous cellular tissue. In the first case death frequently ensues from gangrene of the lungs; in the second, from effusion in the pleural cavity; and in the third, which is the least fatal, the animal may possibly be saved: yet even in this case it is not uncommon to see extensive gangrene developed in consequence of the puncture of subcutaneous metastatic abscesses.

Every case observed in the hospitals during the last year has confirmed the opinion first broached by M. Renault, that the gangrene which so often occurs after surgical operations attended by considerable hæmorrhage, and also from wounds penetrating into the vascular tissues, arises from the putrefaction of small clots of blood in the infundibula of the wounds, and not as has been so often, and is at the present day asserted, from the excess or the absence of inflammation. Among the numerous proofs of this assertion may be cited the frequency of these fatal cases in hot and wet seasons, and also in old animals, or those debilitated by work or old disease, and in whom the blood, more liquid and less alive, has its tendency to decomposition increased.

Such are some of the most important of the general facts to which M. Renault has, during the last year, directed the attention of veterinary surgeons.

M. Renault has also placed on record a remarkable case of strangulated scrotal hernia. He undertook it in utter despair of success. The horse that was the subject of the operation exhibited the utmost prostration of strength—the pulse was imperceptible—the mucous membrane, pallid—a cold sweat covered his body—the colicky pains which he had suffered during the whole of the night had ceased, and, in fact, he was in that state of calm which is the precursor of death. MM. Renault and Bouley, after having opened with great precaution the vaginal tunic, applied the taxis immediately upon the strangulated knuckle of intestine, without making any incision through the peritoneal membrane. After considerable manipulation they succeeded in reducing the hernia. A clam was then applied on the aponeurotic expansion of the cremaster, and at the expiration of three weeks the horse left the hospital perfectly cured.

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## FRAGILITY OF THE BONES IN CATTLE, IN THE PROVINCE OF HESSE.

*By* HERR WILLAND, V.S., of Wörrstadt.

SINCE this disease first appeared, or, rather, was first recorded in Hesse, it has gradually increased to so dreadful an extent, that the government has found it necessary to turn its attention to it, and has prevailed on several scientific and practical farmers to transmit some satisfactory account of it. It will, doubtless, be interesting to peruse some of these different details; I therefore, says Advocate BOPP, of Darmstadt, send you the following collection of them:—

In numbers 44 and 47 of "The Agricultural Journal" for the Grand Duchy of Hesse, are contributions from Herr Willand, veterinary surgeon at Wörrstadt, in the province of Hesse, relative to this disease in cattle.

So many instances of the prevalence of this disease among cattle having prevailed through the whole province of Hesse, I was commissioned by government (says Herr Willand) to travel through the cantons of Allzei, Wörrstadt, Wöllstein, and Oppenheim, in order to observe the symptoms of the malady and the methods of cure employed. I found in the course of my journey eighty-two patients suffering from brittleness of the bones, and of these fifty-six were destroyed.

According to my promise to those by whom I was employed, I shall describe the disease which prevailed in these cantons in 1833, and previously, in the year 1830, and shall add to this description my opinion as to the prevention and cure of it.

*Fragilitas ossium* in cattle is a lingering disease, originating from some altered state of the circulating fluid. It has some similarity to the effects of old age, and may be known by the gradual wasting away of the frame, and the weakening and brittleness of the bones, which latter at length, and without any external mechanical force or cause, are suddenly snapped asunder by the mere weight of the body.

Early in the month of May, 1830, when this disease prevailed at Dexheim, I had many opportunities of observing it.

In the commencement of the complaint, I always found that the animal was lame of one foot, and by this I was frequently deceived, for I attributed this lameness to some external or mechanical cause; but it always increased, and gradually established itself in all four feet, and the animal could then scarcely stand. In general,



I found the beast in very good condition, although there was always a slight degree of fever perceptible. The cow, also continued to give her milk as well as ever, and was generally the best milker in the lot. But these deceitful appearances soon vanish: the animal wastes gradually away—shivers—its teeth chatter—its coat becomes roughened and dull—it is scarcely able to stand—its gait is weak and tottering—its eyes are dull and watery—the mucous membranes of the mouth and nose are pale and foul; she lies down, and is unable to rise again—cough comes on—she yields little or no milk—her food is not properly digested—she has violent diarrhœa, and at length she dies, with or without some of her bones having snapped asunder.

I never saw any oxen attacked by this disease. It always appeared in cows, and in the best of them; and either in those that were pregnant, or that had calved three or four weeks previously. It was quite evident that every little nourishment which the mother had yet the power of gaining was appropriated by the young one in the womb; for I not unfrequently found the newborn animal perfect and healthy, while the parent was weak and wasted.

On post-mortem examination of animals which had died of this disease, I found that the fat had nearly or quite vanished from the cellular tissue—the flesh was flabby—the bones brittle, easily broken, and covered with reddish blue spots—the inner side of the ribs very porous, and dark red—the marrow thin and fluid-like, and of a dirty reddish yellow colour—the substance of the spinal cord and the brain very soft, and of a greyish colour—in the ventricles of the brain, and between it and the dura mater, was a quantity of fluid; and in many animals there was a great deal of fluid in the chest and abdomen, especially in the latter; in short, I found all the appearances which in general accompany a disturbed state of the animal fluids.

Many writers assert that this disease is produced by sour fermentations, and food which generates an acid, as potatoes, turnips, clover, &c., and mouldy or unclean fodder, and also by sour pasture and many kinds of grasses; but they who assert this should recollect that this disease has been prevalent on the Alps for nearly fifteen years, where no kind of grass grows, and impure mouldy fodder, which might generate acid fermentations, is scarcely ever given. They should also recollect that this disease has appeared in the cow-house in which many cattle were kept, all of whom had the same food, and to whom the same attention was paid. A very few suffered from the malady, and all the rest escaped. Lastly, they should recollect that this disease is equally prevalent through the whole province of Hesse, and shewed itself in every

place that I visited with but little difference, whether the animal was well or ill fed, well attended to or neglected.

From this we are led to believe that some internal cause exists—somewhat that favours the formation of an acid in the intestinal canal; for we know that in rumination the digestive organs are the predominating ones, while, on the contrary, the sensitive organs have little influence, and therefore diseases of the digestive organs are of the most frequent occurrence. To this may be added, the different kinds of fodder, which are often prejudicial both as to quantity and quality; especially when the season is bad, and the different crops fail, and recourse is obliged to be had to some substitute.

Another cause is the bad construction and total neglect of the cow-houses, and the absence of pure air in them; and, lastly, the absurd dislike which most owners of cattle have to allowing them to have any cold water. All these things tend more or less to favour the production of this disease, although they cannot be positively said to be the absolute causes of it. I am convinced that the foundation of the malady is laid by the giving of impure or mouldy food, or any kind of food which has a tendency to generate fermentation; and, the foundation being laid, the disease very soon appears.

How is this disease to be cured? First, and most important of all, are preventive measures, since it is far easier to prevent a disease than to cure it after it has once appeared. One of the best means of prevention that a farmer can adopt, is the use of the horse-chestnut, which is very nutritious, and easily digested. He should give them to all his domesticated animals for at least six weeks in every quarter of a year; but as horse-chestnuts are, unfortunately, very scarce with us, we must use the cheapest and best promoters of digestion that we can get, as prepared chalk with gentian root, and a little kitchen salt:

R 1. Powdered gentian root  
Prepared chalk, and  
Kitchen salt.....of each 12 ounces.

Mix them, and give two table spoonfuls morning, noon, and night, in the food or the water.

R 2. Powdered juniper berries  
Sweet flag root  
Gentian root.....of each 4 ounces  
Prepared chalk  
Sal fuliginis (made from wood soot) of each 6 ounces  
Kitchen salt .....12 ounces.

Mix these together, and give two table spoonfuls three times a day.

The first recipe will be adopted by those who are obliged to be

economical; the second is, perhaps, more efficient, but it is dearer. I have tried the second on animals which had been just attacked by the disease, or in whom it had not made much progress, and with considerable success. If the expense is an object, I recommend sifted wood-ashes in conjunction with salt, prepared chalk, and powdered gentian-root, equal parts of each, to be given frequently in the course of the year; and I think that thus the disease was prevented from appearing in many animals. If, however, the complaint had made such progress that the beast could scarcely stand, or lay down altogether, I did not attempt any treatment, but ordered it to be killed, especially if it was in good condition, for the flesh might then be eaten without any bad consequences.

But although by these means I succeeded in curing several cows belonging to Herr Dahlen, of Dexheim, which were attacked by this disease in the early part of 1830, it returned again in the same year; and in spite of all our efforts they died with the symptoms beforementioned, and also very great swelling of the udder.

I assure you that, in the province of Hesse, the greater part of the cows are afflicted with this brittleness of the bones; but the farmers say as little as possible about it, because they would not have the reputation of possessing diseased cattle.

*Magazin für die Gesammte Thierhielkunde* 1838, p. 322.

## BANQUET TO PROFESSOR DICK, AT EDINBURGH.

THERE are few of our readers who have not been long accustomed to regard with peculiar interest the unwearied exertions of Professor Dick in the cause of veterinary science. The Edinburgh Veterinary School is indebted for its existence solely to him; and it is by his almost unassisted labours that the various districts of Scotland have been supplied with veterinary practitioners, whose worth has been duly estimated by the northern agriculturists, to whom they have rendered essential service.

Although apparently with little time to spare from his professional duties, Mr. Dick was not unmindful of the claims upon him as a citizen; in his turn, therefore, and perhaps out of his turn, he consented to become the representative of the incorporated trades of Edinburgh in the town council of that city. He long and faithfully continued to discharge the onerous duties which devolved upon him; and on his retirement, between three and four hundred

of the most influential men in the city, and containing the whole body of the magistracy, assembled at a public entertainment, to express their high opinion of his private and public worth.

The chairman said that he had attempted to make some calculation of the sacrifice of time which Mr. Dick had made in his faithful attendance to his public duties; and he believed that he did not exaggerate when he said, that in nearly a thousand occasions in the course of each year, his valuable and ready services were required. He complimented him on his meritorious exertions to advance the cause of science, and especially that of humanity. He referred to the unwearied labours of Mr. Dick, to make that noble institution, Heriot's Hospital, what it was intended to be by its benevolent founder,—a place of education for the children of decayed freemen; and with much feeling he alluded to the manner in which Mr. Dick had devoted himself to the working out of all the kind and interesting purposes of the Morningside Lunatic Asylum. He finally alluded to his labours in the establishment of another noble institution connected with science and with humanity, the Veterinary School in Clyde Street. He was the first, in that part of the kingdom, to bring the light of science to bear on a study that had long been neglected,—the diseases of the inferior animals. Into this wide and comparatively uncultivated field Mr. Dick had entered, nearly twenty years ago, with all that zeal and enthusiasm which was natural to him, and he had great pleasure in stating that his class-room was now crowded. Here, however, he had to look to Mr. Dick's services as connected with the city of Edinburgh, and deeply sensible were they all of the value of those services. They would now drink, "Health, long life, and prosperity to him."

It is pleasing to read of those, and to witness the public estimation in which some of them are held, who are connected with us in the study and practice of a noble art. Their triumphs are ours—their honours are in some measure reflected upon us. We make no apology for the introduction of this scene. We, too, wish our professional brother health, long life, and prosperity; and, perhaps, a little selfishly we add,—but much good would result from the accomplishment of that wish,—the devotion of a few of those intervals of time which other duties until lately claimed, to the support and increasing value of THE VETERINARIAN.

Y.



## CASE OF GANGRENE AND SLOUGHING ROUND THE CORONET.

*By Mr. STODDART, of Richmond, Yorkshire.*

*Nov. 13, 1838.*—I WAS sent for to a mare belonging to Mr. W. Husband, farmer, near Richmond: she had, previous to my seeing her, been accustomed to harrow the land along with other horses, and had got her feet bruised. On being very lame, the owner turned her into the pasture, and did not notice her for some days, when he saw that she could scarcely step, and sores had broken out round the coronet: the foot was also highly contracted. I pared away a portion of the sole and crust, and let out a great quantity of matter, &c. at the bottom. I then dressed the part with digestive ointment, and put on a poultice.

*14th, A.M.*—She is a great deal better. Continue the treatment.

*19th, A.M.*—Pus has formed half way round the coronet; I punctured it, and let out not less than half a pint of pus. Dress with digestive liniment.

*20th.*—The whole of the coronet is in a black and gangrenous state. Dress with an antiseptic mixture three or four times a-day.

*22d, A.M.*—The sloughing process has commenced right from the bone, leaving nothing but the main trunks of the artery, vein, and nerve unattached to the bone, the smaller vessels all coming away. Dress as before.

In a few days I had the pleasure of seeing a healthy but large unsightly wound; and I now have the gratification of beholding her all right again, and there being very little scar left.

I certainly never witnessed such a case in my life before, and, it being rather interesting, it is at your will for *THE VETERINARIAN*.

## AMPUTATION OF THE ANTERIOR PORTION OF THE LOWER JAW OF A HORSE.

*By M. H. BOULEY, Paris.*

THE operation which I am about to describe was rendered necessary by a fracture of the lower jaw bone. The patient was an entire heavy draught-horse, seven or eight years old. He had been attached to one of those little carriages on four wheels which follow each other in a long line on the roads to *La Comté*. The carriage which immediately preceded his having suddenly stopped, the lower part of his head was caught between the back of that vehicle and the shaft of his own, and the shock was so violent, that the

lower jaw was broken. Although the mischief was perceived as soon as it happened, the owner of the horse still forced him to proceed. In the evening, at the station-house, he gave him his ordinary ration, the whole of which he ate; and it was not until the morning, on his arrival at Alfort, and having worked all night, that he was taken into the infirmary, on the 24th of October, 1838.

The fracture of the lower maxillary had taken place at the neck of that bone, between the tushes and the corner incisor teeth. It stretched obliquely from before backwards, and from the tushes to the infundibulum formed by the lower lip, so that the whole of the anterior part of the maxillary bone, in which the incisor teeth were planted, was completely detached from the other portion of the bone, or only held by the inferior prolongation of the buccal membrane. The surfaces of the fractured extremities exposed to view, posteriorly, the roots of the tushes completely bared; and, anteriorly, those of the corner teeth very much loosened in their sockets. The wound had a greenish black appearance, and it was stained by parcels of oats implanted in the interstices of the bone.

Notwithstanding the thinness of the soft parts which yet remained united, I thought that there was no reason to despair of reuniting the bony surface, and I determined to attempt it.

The horse was carefully thrown on his right side, and I commenced my operation by extracting the corner tooth on the left side, which was very loose. The two surfaces were then very carefully cleansed of all foreign bodies which had insinuated themselves between the fractured edges; particularly every particle of food which he had taken was removed from the crevices of the fracture by means of a pair of forceps, and the wound was afterwards washed with some tincture of Peruvian bark.

The fractured bones were then brought into contact; and, in order to retain them in union, I bored some holes by the aid of a drill between the tushes and the second incisor teeth, above and below, through which I passed some pieces of brass wire, and by means of these I brought together the two jaws, and fixed them, as I hoped immovably. Then, as in spite of these measures, the efforts which the animal made to separate his jaws produced a rubbing motion between the broken surfaces, I surrounded the neck of the maxillary bone with a sufficient compress of tow, and applied a ligature around it, making my bearing-place on the tushes, which still remained firm on the posterior part of the fracture. By these means all motion between the parts was prevented. As, however, there was reason to fear that, in the continual efforts which he made to open his jaws, he would at length break the wires which kept them united, I applied over his head the hood contrived by M.

Barthélemy for fracture of the jaws. Unfortunately, however, the hood was too small for this animal, and I was compelled to content myself with a leathern roller, by the aid of which the jaws might possibly be held together. The horse was then liberated and conducted to the stable. The pupil to whose care he was consigned was expressly charged to moisten his mouth frequently with acidulated water, and to give him, by means of a syringe, water, whitened with wheaten flour, to drink.

25<sup>th</sup>.—The whole of the inferior part of the head below the roller was so completely infiltrated, that it was necessary to remove that strap; and then what I had foreseen occurred: the efforts to open the jaws being no longer counteracted by the additional bandage which I had used, the wires yielded to the repeated efforts of the horse, and the jaws were, to a certain degree, separated. On examining the interior of the mouth, I found that the bandage of tow which I had applied round the neck of the lower jaw was sufficient to retain the fractured edges in apposition; I therefore abandoned every other measure, and left the lower jaw without farther restraint. The animal could drink, and even tried to eat. The detersive injections into his mouth were persevered in.

26<sup>th</sup>.—So offensive a stench issued from the mouth, that I thought it necessary to renew the bandage round the neck of the jaw. The horse was again cast. On removing the tow, I found that the small fragment of the buccal membrane still retained its red colour, and that there was no indication of a tendency to sphacelus. A second bandage was applied similar to the first.

28<sup>th</sup>.—The mouth again exhaled an infectious, and, seemingly, gangrenous odour. The animal was dull, disgusted with his food, and would take only a very little portion of it. The small fragment of the membrane of the mouth had now a black leaden colour, and every thing announced the approach of gangrene. I immediately determined to amputate the inferior portion of the maxillary bone, the union of which seemed to be impossible; and, in order to make a level wound, to remove a considerable portion of the bone behind the tushes.

The patient was cast a third time. I removed every sphacelated portion of the maxillary which was retained only by small portions of membrane; and then, the head of the animal resting on the crest of the occipital bone, and the lower lip being reversed, I removed with a small saw every fragment of the bone that had an oblique direction; and finally, by means of a rasp, I got rid of every rough or uneven portion which the saw could not reach. The hæmorrhage was almost nothing. The animal was again led to the stable, and the same detersive injections ordered to be continued.

At night there was little or no fever—the horse had recovered his natural spirits—he searched about for something to eat, and whinnied when any food was given to his neighbours.

30th.—The wound of the maxillary bone presents a healthy aspect, and the horse is in a very satisfactory state. I offered him a handful of oats, and he ate them with so much appetite and ease, that no one, looking at him, would think that he had been deprived of his lower incisor teeth.

31st.—Seeing that he had disposed of the oats on the preceding day so well, I offered a quarter of a ration of oats and hay, which he ate without the slightest difficulty. At the expiration of two days he was fed like the other horses, and this continued until the 9th of November, when he quitted the hospital nearly cured. The surface of the bone was covered with vermeil-coloured little elevations, and the membrane was fast surrounding the circumference of the stump.

This case appeared to me to be worthy of record for a double reason—on account of its rarity, for I believe that it is the only one on record; and in a physiological relation, because it shews experimentally the part—so important—which, in the act of prehension, the lips and the tongue of the domesticated horse play. I have said the domesticated horse; for in a state of nature, when the horse is compelled to exercise a certain degree of action in the procuring of his food, the loss of the incisor teeth would be fatal to him: but in a state of domesticity, when the aliment is presented already separated from its attachments, the lips and the tongue are sufficient to accomplish the act of prehension, without any aid from the incisor teeth. The loss of the anterior part of the inferior maxillary is a much less serious one than that of the whole of the free portion of the tongue. A horse in our hospital that had lost this portion of his tongue, experienced very great difficulty both in seizing and swallowing his food, and especially his drink; while the horse whose case I have been relating could execute these acts as perfectly as if his lower jaw had never been injured.

*Recueil de Med. Vét., Nov. 1833.*

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## A MARE WITH ONLY ONE KIDNEY.

*By MM. DUPUY and PRINCE.*

A MARE belonging to the artillery was destroyed at the veterinary school at Toulouse on the 25th of October, 1830, on account of being glandered.

Nothing unusual presented itself on dissection, except that she



had but one kidney. It was at the entrance to the pelvis, a little to the left. Its form was that of the right kidney. It was as large as two ordinary kidneys. Its scissure was situated posteriorly, and permitted the passage of a large vein and a ureter. Anteriorly it received, from a point immediately opposite to the scissure, a very considerable arterial branch of the ordinary size of the emulgent artery, and which separated itself from the abdominal aorta between the pelvic and crural trunks.

This kidney was situated a little obliquely. The superior face corresponded to the division of the sacrum and the last lumbar vertebra. The anterior border was on a level with the bifurcation of the aorta, and its right angle was situated more posteriorly than the left. The ureter terminated on the left side of the neck of the bladder, but presented no abnormal appearance, and was about the usual size. The renal cavity was a little larger than usual, and the infundibulum was also capacious. The texture of the kidney was natural. One super-renal capsule was near this left kidney: the other capsule, and not exhibiting, any more than the first, any unusual appearance, was also situated to the left, and as high as it was usually found. There was nothing on the right side.

Not having met with any case resembling this amidst the numerous anatomical and pathological facts that have been hitherto published, we thought that this curious case possessed some interest, and have therefore laid it before our readers.

*Journal Theorique*, 1835, p. 170.

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[This is, I believe, the only case on record of the total absence of the kidney in any of our patients, and it is inserted here as somewhat illustrative of Mr. Bainbridge's case, as reported in the Abstract of the Proceedings of the Association. There is a point of physiology which deserves attention here, and I believe that the fact has been the same in the very few cases of a single kidney recorded of the human being. One kidney is altogether wanting, but both the supra-renal capsules are found, and little or not at all diminished. This does not throw any light on the actual design and function of these capsules, but it proves that they are, to a certain degree, independent of the kidney. They exist where no kidney is to be found.

Again; the single kidney, wherever it is found, is not in its natural situation: it is partly or wholly in front of the vertebral column. M. Dupuy describes the one which he saw as being situated at the entrance to the pelvis, and a little to the left. We should expect to find it here, from the better supply of nerves and bloodvessels to enable it to discharge its double function. There are two other circumstances of which M. Dupuy does not

speak : we should not, perhaps, forget them, if a case of single kidney should ever present itself in our post-mortem examinations. If one of the arteries is wanting, there is still a small vessel ramifying upon and lost in the cellular tissue of the part that should be occupied by the bladder; and if the supposed single kidney is carefully examined, it will turn out that it was only in appearance single, and was actually composed of the two blended together.—Y.]

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## A SINGULAR FISTULA IN ONE OF THE PITS ABOVE THE EYE (UNE DES SALIERES).

*By M. MERLE, of Pézénas.*

ON the 21st of May, 1830, I was desired to examine a bay horse, six years old, that during the last fifteen days had fed with considerable difficulty. It had a large tumour which occupied the space between the eye and the forehead on the left side. I determined to lance it at the spot corresponding with the pit of the eye, and a great quantity of the spikes of brome-grass (*Bromus hordereceus*) immediately protruded. I cleared them away, and threw in some detersive injections; but on account of the direction of the fistula, neither the injected fluid nor the suppurative matter could escape, and it was necessary to absorb them by means of a piece of sponge. I, however, assured myself of the depth of the fistula by means of a gum elastic sound, which, being introduced above, was gradually pushed into the cavity of the mouth. I then passed a straight sound, which I brought out at the right commissure of the lips. I attached to one end of this probe a long piece of tow, terminating in a point, and moistened with tincture of aloes. With some management I introduced it into the whole of the fistulous passage.

On the following day we removed this pledget, in order to introduce another, charged with an active digestive; but in the act of mastication it got between the molars, and was broken, and it was necessary to renew it every two or three days. If we neglected this, the pit of the eye would again become filled with that by which it was before distended; the animal would be sadly inconvenienced by it, and refuse to eat. During a month, the fistula was dressed in this manner, namely, by the occasional introduction of fresh pledgets of tow. Finding the inconvenience that resulted from the passage of the seton into the mouth, I attempted to give

it a new direction. I passed the elastic sound into the pit above the eye, and, pressing lightly with my right hand, while I held my left under the angle of the lower jaw, I began to feel the end of the sound at the superior part of the channel. I then determined to pass my probe in this direction; but as I had not the instruments necessary for the operation, I postponed it until the following day.

The morrow having arrived, I took a long seton needle, but not so large as the sound of which I have spoken. I covered the cutting edge of the needle with several layers of wax, until I had made it for the time a simple sound, that would not cut for itself any false route. The horse being ready, I sounded him again, in order to be assured of the direction which I ought to take; and as soon as I had withdrawn the sound, I passed the needle in precisely the same course. When I began to feel it in the channel between the jaws, I pressed it with some force, and it penetrated through the skin, leaving the wax in the wound. I prolonged the opening longitudinally, and fixed anew my seton in this artificial fistula, having first dressed it with weak spirit, and afterwards with digestive ointment. The animal lost some blood in the operation, but he did not suffer much during it, nor was he seriously inconvenienced afterwards.

I thought that the seton passing this way would not be torn by the teeth; but I was deceived. It suffered the same fate as that which terminated in the mouth.

I then took an annealed metallic wire; I surrounded it with tow, and passed it through the same fistulous opening. In this way my object was at length accomplished, and the fistulous canal was closed. I every-day threw detersive injections into the wound, and replaced fresh tow around the wire. The horse now began to eat without difficulty, and acquired condition.

The bad smell which was exhaled from this ulcer made me think that there was caries of the sphenoid bone. I cauterized it, and, in order to reach the bone without injuring the surrounding parts, I passed my cautery, at a white heat, through a metallic tube. By these means the fistula became considerably enlarged, and the lotions and injections were more easily applied.

About a year after this metallic wire had been adopted, I chanced to see the animal again. When it drank, a portion of the water escaped through the fistulous opening: a portion of the food likewise followed the same route, and frequently obstructed the passage. Then, when no water could ascend or pus descend, the horse lost his spirits, and would not eat; but when a sound was passed, and water, with a small portion of spirit added to it, was injected, the animal's spirits and appetite immediately returned.

Thus he continued for another twelvemonth. He was constantly used, and did his full share of work. Some of the water, as he was drinking, escaped through the pit above the eye. Beyond this he did not appear to be incommoded by the fistula. I attached a large piece of copper to his head harness, in order to prevent any foreign bodies from entering or falling into this chasm. I saw him often, I rode him when I wanted him, and in 1832 he was given to the hospital of Pézénas, where he was employed in turning a rude kind of mechanism, for the purpose of drawing water for that establishment. He is there at the present moment (1838). The hollow of the pit is now enormously increased. It is become infundibuliform, and it will hold more than half a pint of fluid. The skin is considerable distended there, and clings to the bone, in proportion as the adipose body which should naturally occupy this cavity is wasted away. There is no other wound than the canal which penetrates into the mouth. Notwithstanding all this disease in its immediate neighbourhood, the eye is not in the slightest degree injured. I purpose to send to you the head of the horse whenever he may die.

*Journal des Vét. du Midi.*

## THE IMPORTATION OF SHORT-HORNED CATTLE INTO FRANCE.

OUR readers will smile, and yet exult, when they peruse the following extract from the *Journal des Haras* of the last month.

“ We, some time ago, spoke of the commission given by the Minister of Commerce and Agriculture to MM. Yvart, Inspector-General of the Veterinary Schools and Agricultural Establishments, and Lefèvre de Sainte Maire, Superintendent of the Stud at Pin, to purchase in England a certain number of the Durham short-horned bulls and cows, similar to those which have been already placed at the school of Alfort. This mission has been accomplished with all the intelligence and zeal that might be expected in the persons who were employed.

“ A correspondent writes to us from Normandy, that ‘ every one presses to see and to admire the magnificent cattle that have arrived from England. The Norman breeders, who are difficult to please, are compelled to be silent; and, at the fête of St. Denis, the number of visitors was immense.’

“ Another of our correspondents tells us, that the afflux of the curious was so great that it was necessary to have recourse to the gendarmerie to maintain good order, and to prevent some of the



spectators from being crushed to death. This resembles not a little that which passed in Austria, at the purchase of the celebrated stallion *El Bedavi*, by the Baron de Coetdihuel. The population of that country, indignant at the purloinment of this noble animal by the French, endeavoured to oppose his departure by force, and it was necessary to employ detachments of the military to protect those who were leading him away.

“However this may be, the Durham bulls and cows are superb animals. This is a positive fact; and, indeed, it must be true to the very letter, when the Normans, who, generally speaking, find nothing well done or good except in their own country, are compelled to be silent.

“These magnificent animals are forty in number.”

We smile when we read this account, and are proud of the compliment indirectly and unconsciously paid to the country whence these “magnificent animals” were derived; but soon, perhaps, our reflections assume a somewhat different character. Our neighbours have, for many a year, been stealing from us our best horses of the purest blood. The number of thorough-bred stallions and brood mares yearly exported to France and the various continental states is almost incredible; and, as we have in a former number quoted from the foreign journals, the object is not attempted to be concealed—it is the improvement of their native breeds. The native breed of every continental state has been improved to a very considerable degree. In a recent account of the government studs, no fewer than eighty stallions are enumerated, many of whom had previously obtained a high and deserved reputation in England. Races have been established in almost every part of France, and, with them is necessarily connected the cultivation of the pure breed.

Within the last few years the English long-woolled sheep have been imported into France in very great numbers. There is a large flock of them at Alfort, and in many districts of France this breed is completely naturalized. Not only so, but the long-woolled breeds of foreign countries are most of them improved by that sheep which was once the exclusive property of England alone. The consequence of this is, that the exportation of our long wool is considerably and progressively diminished.

The same attack is now made on our incomparable breed of short-horned cattle. Forty of these “magnificent animals” have been added to the breeding stock of France; and not only so, but our continental neighbours, while they endeavour to cull the pride of our herds, sarcastically observe that “we do well in profiting by the circumstances of the present hour; for a very short time only will elapse before every continental state will possess, and to as

great an extent as it could wish, the elements of the improvement of their respective breeds."

Do we object to this? Not in the slightest degree. Prosperity to agriculture and to the manufacturing interest every where! would be our toast. Let our horses, and our sheep, and our cattle, continue to improve, and remodel, and almost perfect the breeds of other countries; yet, if we are faithful to ourselves—if we carefully mark the progress of improvement around us—if every approach to the yet unequalled excellence of our native breeds determines us still to maintain, and which we can readily do, our wonted pre-eminence, let the present system of emulation proceed to its full extent! But it may be feared, or rather it is too evident, that in the struggle of political parties which characterizes and disgraces the present day, the interest of the agriculturist may be ruinously neglected. It is on this account that we hail the establishment of the English Agricultural Society.

While every thing connected with the interests of the farmer will in its turn occupy the attention of the Society, the breed of horses, and cattle, and sheep, will engage their deepest attention. The government, whatever may be its political character, will, must lend its aid, in the manner which may seem, as circumstances may arise, most fitting. In the exercise of our humble but useful profession, we may possibly contribute to the maintenance of the perfection of the various breeds; and ever thankful shall we be to those who are placing us in the position which we ought long ago to have occupied,—conservators of the health of these noble animals of various classes, which may improve and ennoble other and foreign breeds, but the pre-eminence of which interest and honest pride will induce the British farmer ever to maintain.

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LIST OF VETERINARY STUDENTS WHO HAVE OBTAINED THEIR  
DIPLOMAS AT THE ROYAL VETERINARY COLLEGE.

*December 4th, 1838.*

- Mr. C. S. Green, Petworth
- H. A. Baker, Dedham, Essex
- R. Metherell, Ashwater, Devon
- S. Dean, Manchester.

*December 18th.*

- M. W. Lloyd, Cork
- S. E. Turner, Gleadthorpe
- F. McDowell, Dorchester.

THE  
VETERINARIAN.

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DIABETES IN HORSES.

*By Professor STEWART, of Glasgow.*

I HAVE never met with any faithful account of diabetes, at least as it has occurred in my own practice. It is very common here, and I dare say is not wanting elsewhere. Having been completely successful in the mode of treatment which I adopted a few years ago, and which differs from that which is supposed to be the best, I may venture to make a few remarks upon the disease.

I think it was about the beginning of 1835 that I first began to understand the kinds and treatment of diabetes. Before that time I lost several patients by it. Subsequent experience shewed that the treatment was not good. I found that there exists two kinds of diabetes; and that the remedies which invariably performed a cure in one kind, as invariably did mischief in the other. Many patients, I regret to say, were lost before this discovery was made; but discoveries are of little use if they avert no evil.

KINDS OF DIABETES.

There are two kinds of diabetes. The symptoms are different; and the treatment, to be successful, must be different too. In the one kind there is no fever, nor, so far as I can find, any local inflammation: this I would term *simple diabetes*. In the other kind there are fever and bronchitis: this I would denominate *febrile*, or *bronchitic, diabetes*.

I am not sure that the two are produced by different causes; nor can I tell that the one may not occasionally assume the same symptoms, and then require the same treatment as the other. It may therefore be objected, that I speak of the same disease in different stages, rather than of the same disease in different forms. In practice it matters nothing which way we regard the distinction: either will do. At present we will not argue this matter.

## SIMPLE DIABETES.

It is chiefly to this kind that authors allude in describing diabetes; yet it is clear that they have seen the other. Gibson, and White in quoting Gibson, say, that "the true diabetes is not soon conquered, and that it usually ends in rottenness." By rottenness I suppose is meant farcy and glanders, or disorganized lungs, which are frequently the results of febrile diabetes, but never, in my experience, of the simple kind.

*Symptoms.*—In the 10th vol. of THE VETERINARIAN, p. 683, there is a very good account of the symptoms. Profuse urination and excessive thirst are the principal symptoms, from beginning to end. The horse stales from four to twelve times an hour, and he almost never refuses water. Even when his thirst seems to be fairly quenched by two or three pailfuls of water, he will take as much more in less than an hour. The urine is always quite transparent; but I never had the curiosity to see if it contained any sugar, like that of human diabetic urine. The patient cannot stand much work; he eats, but not heartily, and when water is withheld he refuses his corn. There is no sign of fever. After a time, of uncertain duration, the horse loses flesh, and becomes very weak. In this state he is usually put under treatment. I cannot tell what would happen if he were longer neglected, or not cured. I have had no case that resisted the treatment. Perchance some other practitioner has; and to him the profession, I doubt not, will be thankful for the other symptoms, and for the appearances found on dissection. I have never seen any body who could tell me.

*Cause.*—Simple diabetes is sometimes produced by damaged food: but such seems not to be the only and invariable cause; for I have seen it occur when the food was faultless, and not producing it in other horses. This requires further investigation.

*Treatment.*—The shortest way of curing the disease cannot be taken unless the horse be put out of work. Let him rest, forbidding even exercise. Put him on bran mashes and good hay. Green meat, roots, and corn raw or boiled, are not good. Bran mash and hay are sufficient. Give, every day, solid opium, three drachms; catechu, gentian, and ginger, of each two drachms, beaten into a ball with a little tar. Alum, acetate of lead, chalk and other astringents, may be used; but, after trying many, I can recommend the opium ball as the best. About the third or fourth day, the urine should be dark-coloured, or turbid, and in little more than the ordinary quantity. If the diabetes do not abate somewhat on the second day, two of the balls may be given, one at morning and one at night. One ball should be given for two or three days after the diabetes has ceased, for it is apt to return. I usually give the horse



a mild dose of physic before putting him to exercise, or on corn. It seems to prevent relapse. Let the patient always have as much water as he pleases; but give it six times a day, and warm it a little.

When the horse must work,—and in many mild cases the owner will not spare him—he must get the same medicine. His food, in this case, must consist of a large allowance of beans, and if the hay or oats are bad, the bad article must be *entirely* withheld. Working, however, is so much against a cure, that the practitioner should as often as possible get the patient laid up. At work, he will be one day well and another day worse; and it will be many days, perhaps weeks, ere he is quite right.

Lime-water, bean-flour, pea-flour, chalk, and clay, are often used to arrest diabetes. Mr. Gloag, of the 10th Hussars, used to give the cavalry horses water in which hot iron had been quenched. He found it a simple and frequently an efficacious remedy against diabetes. All these, however, are quite useless when the disease is severe.

#### FEBRILE OR BRONCHITIC DIABETES.

*Symptoms.*—The horse is dull, his appetite defective, pulse quick and hard, mouth hot, eyes and nostrils red, and his breathing rather quicker than it ought to be. He urinates as often, and as much, as in simple diabetes; and his thirst is equally unquenchable. After a day or two it is observed that he does not lie down at night. The subsequent symptoms are just those of bronchitis in combination with diabetes.

*Cause.*—It frequently happens that the horse is dull, evidently unwell, for some days before he has either fever or diabetes; and I am much disposed to believe that the bronchitis is the cause of the fever, but I am in doubt which is the cause of the diabetes. Perhaps it is neither, for we often see both proceeding even to death without any diabetes. The groom sometimes declares that the horse was well enough till he took the staling-evil. But I have, again and again, found the patient ill with bronchitis for several days before diabetes commenced. For awhile I thought that the diabetes might possibly be the cause of bronchitis and fever; and, on that supposition, I endeavoured to avert the diabetes as the cause of all the mischief; but the result proved the error.

After much attention to the subject, I have to confess, that I have not discovered the cause. It may be produced by the causes which produce the bronchitis; or it may be the result of a particular state of blood, that state arising from bronchitis, or some other disease of the lungs. I can say no more about it. Discovery

of the cause might enable us to prevent the disease, but it would not enable us to treat it more successfully.

**TREATMENT.**—The horse, whatever be his condition or work, is to be bled, to get a very mild laxative, to be put on hay and bran mash, and to obtain absolute rest. He is to be treated altogether for bronchitis. The diabetes almost never requires any treatment. In a very few cases the urine may continue to flow in profusion for several days after the bronchitis and fever have been subdued. When it does so, an astringent ball does no harm, but it very seldom does any good; and if there be the least degree of fever remaining, this ball always does harm. It may stop the diabetes, but, if it does, the fever is sure to be heightened.

It is of great consequence to keep the horse very quiet, and very low. Ten minutes' walking exercise invariably aggravates the symptoms; and, in severe cases, a cure is almost out of the question if rich food be given. The groom cannot be made to understand the danger; and he is certain to be coaxing the horse with linseed, barley, roots, or something nourishing. A simple prohibition of corn is not enough. He must be made to understand that any thing besides the bran-mash and hay, is certain to injure the horse, who will seldom refuse to eat more than is good for him. Exercise, likewise, must be strictly forbidden. Water, a little warmed, should be given six times a day; gruel is to be prohibited. The stable should be airy. A warm or a crowded stable is particularly pernicious. The body should be clothed, and legs bandaged.

The bleeding may require repetition more than once; and the bowels may require a laxative twice a week. In fever medicines I have no faith. I never use them, nor need them in this complaint. If the patient come under treatment before matter has formed in the lungs, bleeding, starvation, quietness, and laxatives do all; at least, I have never seen them fail.

**TERMINATIONS.**—Under proper treatment, the patients all recover in a period varying from seven to twenty-five days.

When the horse is neglected, or ill-treated, he often becomes broken-winded, or thick-winded, or glandered, or he dies. On dissection, I have never found any disease in the kidneys. The lungs are always disorganized, full of abscesses containing solid or fluid pus, occasionally mingled with blood. When the patient has been glandered some days before death, tubercles and abscesses are found in the muscles, and in the bones. The lungs are disorganized, and the membrane lining the air-passages is studded with ulcers, and abscesses, and tubercles, in progress to ulceration. Patches of the membrane are softened, and yellow, like the thick

cheesy substance found in tubercles. At no very distant time I mean to write an account of glanders, as it prevails hereabouts. It is very common, and in almost every case traceable to neglected bronchitis.

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## ON LIFE AND ORGANIZATION.

*By Mr. W. F. KARKEEK, Truro.*

[Continued from p. 27.]

A *third character*, by which the living body is distinguished, is derived from the peculiar disposition of the materials of which it consists. That disposition is always regular and determinate, constituting arrangement. This arrangement is termed structure; the process by which it is effected is called organization: hence the body in which it is found is said to be organized.

The simplest form in which we see life displaying itself requires a structure of solids and fluids; the solids forming meshes or cells, in which the fluids are contained, and a mutual action and reaction appearing to exist between them. This is the simplest effort at organization, and is nearly a description of the lowest orders of animals and plants. For instance, the *medusæ*, those jelly-like masses that are observed floating on the sea, are little more than a double sac, containing, in its intervals, an immense quantity of watery fluid. Their only function is nutrition, which is equally performed by the external surface answering to the skin, and the internal representing the digestive organs.

In looking through all animated nature we see a variety of organization, corresponding to the variety of climate, soil, &c. &c. These differences are connected with the different habits and manner of living which belong to different species; and at any one place, the various species, both of animals and plants, have many relations and mutual dependencies arising out of these differences.

Compare a Dutchman with one of the Neapolitan lazaroni, or an Englishman with an Arab of the desert. Observe how in the former the whole outline may be described by circles or curves gradually falling into one another; how the interstices between the muscles are filled in, and the whole figure is round and plump: while in the latter every thing is hard, dry, and angular, the muscles start forth abruptly from the skin, and on the least exertion display themselves, as if dissected off by the knife of the anatomist. This contrast is beautifully marked by Sir Walter Scott, in his description of the trial of strength and sleight of hand between Richard and Saladin, in the tale of the Crusaders.



“ The climate of our own country is certainly not to be boasted of for its perpetual serenity, and it has had no lack of abuse from our own countrymen and others. We are, none of us, without a pretty lively memory of its freaks and changes, its mists and tempests, its severe winters, and its springs that are often so late in their arrival that they find summer standing in the gate, to tell them that they are no longer wanted. All this we know ; yet which of us is not ready to forgive all these, and to say, with a full heart,

‘ England, with all thy faults, I love thee still ’ ?

Which of us is not grateful and discerning enough to remember, that even our fickle and imperfect climate has qualities to which England owes much of its glory ? Which of us can forget that this abused climate is that which has not enervated by its heats, has not seduced by its pleasures, has not depopulated by its malaria, so that under its baneful influence we have become *feeble, listless*, reckless of honour or virtue—the mean, the slothful, the crouching slaves of barbarians, or even effeminate despots. Our climate has done none of these things, produced no such effects as these ; but is that which has raised millions of frames, strong, muscular, and combatant, and enduring as the oaks of its rocky hills ; that has nerved those frames to the contempt of danger and effeminacy, and has quickened them with hearts full of godlike aspirations after a virtuous glory. What a long line—what ages after ages of invincible heroes, of dauntless martyrs for freedom and religion, of solemn sages and lawgivers, of philosophers and poets. What a long line of these has flourished amid the glooms and severities of this abused climate, and—while Italy has sunk into subjection, and Greece has lain waste beneath the feet of the Turk—has piled up, by a succession of matchless endeavours, the fame and power of England to the height of its present greatness ;—

‘ In our halls are hung  
Armoury of the invincible knights of old.  
We must be free or die, who speak the tongue  
That Shakspeare spake ;—the faith and morals hold  
Which Milton held. In every thing we are sprung  
Of Earth’s best blood, have titles manifold.’

And will any man tell me that the spirit of our climate has had nothing to do with begetting and nourishing the energy which has borne on to immortality these great men ; which has quickened us with ‘ earth’s best blood ;’ which has given us ‘ titles manifold ’ ? I believe that we are indebted to our climate for a mass of good and a host of advantages of which we little dream\*.”

This variety of organization, corresponding to the variety of cli-



mate, is more particularly seen in our domesticated animals. Contrast, for instance, the animated countenance and the beautiful proportions of the Arab horse with the sluggish inanimate features of the Flemish breed; the swift and stately Barb with the shaggy-haired indigenous pony, found on the moors of Devon and Cornwall; or the huge London dray-horses with the small diminutive animals of Thibet and Ceylon. This last comparison is, perhaps, the most remarkable instance of variety in the same species that occurs throughout the whole terrestrial creation. From these few examples it will appear very evident that the variety of organization corresponds to the variety of climate. I could multiply these examples, but it cannot be necessary. We observe the same effect produced among vegetables: their organization is remarkably adapted to the variety of climate; and by this adaptation the globe is clothed with vegetables and peopled with animals from pole to pole.

We have now arrived at three characters which distinguish a living being:—

1. The power of resisting, within a certain range, the ordinary operations of physical agents.

2. The power of converting matter of different qualities into its own proper substance.

3. The power of arranging the substance thus formed in a regular determinate manner, denominated structure.

There are two additional phenomena, which are equally distinctive of it: these relate to its *origin* and its *termination*.

4. It is a *general law, that living beings derive their origin from pre-existing living beings*—it is the vital motion in the parent stock that communicates to the offspring its vital impulse;—it is life that gives origin to life.

From what has been already stated, it may appear scarcely requisite to enlarge further on this subject; nevertheless, as contrary opinions have been and still are entertained, it may be worth while to allude to them, and for the purpose I cannot do better than give the singular opinions of Lamarck,—“that the various species of animals and plants, which are now found existing, were not original species, but the effect of considerable alteration in the local circumstances in which each are found to exist. Thus, a change of external circumstances may cause one organ to become entirely obsolete, and a new one to be developed, such as never before belonged to the species. For instance, otters, beavers, water-fowl, turtles, and frogs, were not made web-footed in order that they might swim, but their wants having attracted them to the water, in search of prey, they stretched out the toes of their feet to strike the water, and move more rapidly along the surface. By

the repeated stretching of their toes, the skin which united them at the base acquired a habit of extension, until, in the course of time, the broad membranes which now connect their extremities were formed.

“In like manner the antelope and the gazelle were not endowed with light agile forms, in order that they might escape by flight from carnivorous animals, but, having been exposed to the danger of being devoured by lions, and tigers, and other beasts of prey, they were compelled to exert themselves in running with great celerity, a habit which, in the course of many generations, gave rise to the peculiar slenderness of their legs, and the agility and elegance of their forms.”

From what I have stated of Lamarck's theory, my hearers will be prepared also to hear that, “matter is also capable of assuming active energy, and exchanging itself, according to place and circumstances, into modes of organized existence.” “That nature is daily engaged in the formation of elementary rudiments of animal and vegetable existence—that she is always beginning anew, day by day, the work of creation, by forming *monads*, or ‘rough draughts,’ which are the only living things she gives birth to directly. These are gradually developed into the higher and more perfect classes, by the slow but unceasing agency of two INFLUENTIAL PRINCIPLES: first, the *tendency to progressive advancement in organization*, accompanied by greater dignity, in instinct, intelligence, &c. &c.; secondly, the *force of external circumstances*, of variations in the physical condition of the earth, or the mutual relations of plants and animals.”

Such is the machinery of the Lamarckian system. Time will scarcely allow me to detail to you the process whereby, after a countless succession of generations, a small gelatinous body is formed into a ring-tailed monkey, thence to an ourang-outang, and finally assuming the figure, attitudes, and dignity of man.

I believe there are very few persons who receive with any degree of favour this hypothesis of Lamarck; but the materialists of the present day, if they do not believe in the “transmutation of species,” speak of “organic matter waiting to be organized,” and so docile withal in its nature, that it is more plastic than Hamlet's cloud, which, in the opinion of the old courtier, was “backed like an ouzel—and very like a whale;” for this plastic matter is, it seems, quite ready for sea or land, for plant or for animal; and, just as the waves set or the winds blow, it may become a sea-weed or a whale, a lettuce or a lion. Doctrines of this kind require only to be exposed, that they may be expelled;—their absurdities speak for themselves. They strike directly and immediately at that fundamental doctrine of all religion and all morality—the crea-

tion of the world by a Being of infinite wisdom and power, and of every living creature after its kind, as is expressly declared in the sacred volume.

The doctrine of materialism strikes at the root of all moral obligation, reduces man to a mere creature of the world, leads him to make the most of his enjoyments by what means he can, fulfilling to the letter the epitaph of Sardanopalus, "Eat, drink, and be merry, for the rest is nothing;" an epitaph, says Aristotle, fit for a hog. It cannot be doubted that Sardanopalus was one of those who considered the grave "a place of eternal rest."

This brings me to the last character by which a living body is distinguished—*that of terminating its existence by the process of death.*

5. In all the details of terrestrial nature, whatever they may be, it appears that the properties of the instrument as matter, and the interferences of external agencies, always become, in the course of time, longer or shorter, according to circumstances, too powerful for every individual agent, and ultimately put an end to its working. This final victory of the dull and silent properties of mere matter over the activity of the most energetic life in matter, is in accordance with all the terrestrial actions which we witness in those parts of matter which are not under the influence either of life or growth. The only exceptions which we know are those of the motions of the planets, and the actions of the beams of the sun; and they are so stupendous, and we know so little of their causes, as existing in any thing but the mere phenomena which we see, that we cannot bring them into comparison.

All mechanical actions in terrestrial matter, however powerful their causes may be, are ultimately brought to an end by gravitation; and compounds and aggregates are liable to be dissolved by so many chemical agencies that we cannot confidently assert that any one inch of the solid, any one drop of the liquid, any one breath of the ærial contents of our globe is in the same state now as when first created. The probability is, that it is not; for all that we meet with, either on the surface of the earth, or dig from under it, is either a ruin, or a new individual formed out of the old materials or something else.

We might carry our illustration farther; for everywhere in nature we meet with a stop—a check, as it were, or limit. Some of the small flies which are hatched in the mud by the banks of rivers, and get on the wing during the night or early dawn, do not live to enjoy one blink of sunshine. Man numbers his threescore and ten years; some other animals, as the eagle, the elephant, and especially the large cartilaginous fishes, have a longer duration; and there are some peculiar trees which can exist for five hundred



years, and probably for a thousand, or more; but in every case there is a limit; and there is not in nature one production, be it magnificent or be it minute, which does not proclaim that it is a mere work, and not the original worker.

Nor is this confined to those temporary productions to which we have alluded; for we have it on the record of eternal truth, that "the earth shall wax old as doth a garment, and the elements shall melt with fervent heat." But it is not said, even here, that those elements shall return to that original nothing out of which they were called by the voice of Creative Power. All is in his keeping; and, visible or invisible, not one atom can perish without the exercise of the same power which originally called it into existence.

The heavens may "pass away as a scroll when it is rolled together;" and suns and systems, more than mortal tongue can number, may be blotted out from the ken of all created beings; but if He should say, "Return!" they must return in all the freshness of young beauty, and all the vigour of young life: and what tongue can say, that the march of creation, even on this our globe, has yet arrived at the furthest limits of its progress? "Who can say that the powers of nature are exhausted, and that the Creator will not call new beings from her fertile womb? We cannot say so. Revolution has succeeded revolution; races have been successively annihilated, to give place to others. Other revolutions may yet succeed; and man, the self-styled lord of the creation, be swept from the surface of the earth, to give place to beings as much superior to him as he is to the most elevated of the brutes\*."

The short experience of a few thousand years—a mere drop in the ocean of eternity—is insufficient to warrant a contrary conclusion; still less will the contemplation of past creation, and the existing constitution of nature, justify the proud assumption, that man is the sole end and subject of this grand system of animal existence.

There is, as I said before, a constant change going on in bodies around us, above us, and below us; and although we cannot bring so vast and shadowy a subject within the limits of our narrow science, so as to make it matter of calculation, "yet as an animal † produces only a limited number of broods, and dies—a tree a limited number of crops of fruit, and withers, dries, and falls to the ground; so, after a certain succession of changes, the number of which we cannot know, a continent may, probably must, be gathered to its last home in the deep. So, after the production and the ruin of a certain number of continents, a planet may be no longer fit for the

\* Cuvier.

† Mudie.



office for which it was prepared ; and in the same way, in God's good time, the days of suns and systems, and the whole material universe, may be numbered : but there is ONE who will remain unchanged ; and the *spirits* which he has made are *all* safe in his keeping, amid the final ruin of nature."

These changes, however mysterious they may appear, are only a part of the universal law which was established when the earth was called into existence, clothed with plants, furnished with animals, appointed to run the course of its days, its seasons, and its years, in all the variety of their changes of time and place, and given to man as a heritage for knowledge and for enjoyment ; "when the morning stars sang together, and all the sons of God shouted for joy," over the accomplished work of a new world and a new race.

But let us confine ourselves more closely to the subject.

During life there is a constant and continual change going on in our bodies,—from the moment that our being commences to its final termination. Foreign matters are taken in from without, and by the action of what are called assimilating functions, become part of our composition ; while, on the other hand, the materials of which our frame had been built up, being now old and unfit any longer for the necessary duties, are conveyed by the absorbents from the place which the new matter comes to occupy, and finally expelled from the system by the outlets provided for this purpose.

Life, then, consists of a combined series of actions and reactions, ever varying, and yet constantly tending to definite ends. From the first moment of existence until death the body is continually undergoing decay and renovation ; so that at no two periods of life does it consist of exactly the same constituent particles.

So great is the difference in form and feature alone, that even the mother who has not seen the interesting change would be unable to recognise the active and lively youth approaching to manhood in the being which she tended in his childhood, when fair and blooming as a flower, and playful as a summer breeze.

Perpetual mutation appears to constitute the fundamental law of living nature ; and it has been further decreed, that the very existence of this change—this constant addition of new particles—this constant internal motion in our textures, leads to the ultimate destruction of that life of which it is a present result. If we contemplate the human being in his infancy, youth, manhood, and old age ; we shall find, at each of these periods, he is another and yet the same person.

Even to extreme old age the change goes on :—It proceeds until the density of the textures has almost reached its utmost. The vessels no longer yield to the fluid which distends them ; its

course is obstructed, the circulation grows slower, and with it the animal heat is diminished.

The extremities of the nerves, lacking the moisture necessary to the proper execution of their functions, are no longer affected by objects as heretofore. The ear becomes hard of hearing, the eye is dimmed, the tongue has lost its taste; flowers have long since lost their scent and beauty; fruits no longer retain their flavour. The whole of nature seems dull and colourless. The flame of life burns more and more feebly, and its close is marked by phenomena similar to those with which it begun.

The circulation first manifested itself, and ceases last.

The right auricle is the part first seen to pulsate in the embryo, and in death is the last to retain its motion.

The phenomena of nutrition, to which the fœtal existence is almost entirely limited, continue even when the organs destined to establish a relation with the beings that surround us have long been sunk into a slumber from which they are never to be roused.

The following is the order in which the intellectual faculties cease and are decomposed.

Reason, the exclusive attribute of man, first forsakes him. She begins by losing the faculty of associating judgment, and then of comparing, of bringing together, and of connecting a number of ideas, so as to judge of their relations. The patient is then said to be delirious. This delirium has generally for its subject the ideas that are most familiar to the patient, and his prevailing passion is easily recognised. The miser talks in the most indiscreet manner of his hidden treasures; the unbeliever dies haunted by religious apprehensions; and sweet recollections of a distant land, of the home of his childhood, occur to the dying traveller: then it is that ye return with all your powerful energy and delight.

After reasoning and judgment, the faculty of associating ideas is next completely destroyed—the memory then fails—the patient no longer recognises his nearest and most intimate friends. At last he ceases to feel; but his senses vanish in succession, and in a determinate order. The taste and smell ceases to give any sign of existence; the eye becomes obscured by a dark and gloomy cloud; the ear becomes impervious to sound; and the body, at last, gently yields its spirit to the God that gave it.

And here the history of life ought to terminate: if, however, it be considered that the changes which bodies experience after death throw a considerable light on its means, its ends, and its nature, there will be an obvious necessity for shortly inquiring into the different phenomena which accompany the decomposition of animal substances. As soon as life forsakes our organs, they become sub-

ject to the physical laws operating on substances that are not organized. An inward motion takes place within their substance, and their molecules have a greater tendency to become separated from one another as their decomposition is advanced.

Before putrefaction can come on in an animal body, it must be entirely deprived of life: thus we may say, that life is a continual struggle against the laws of physics and chemistry. And it appears rather singular, at first, that death should furnish a just idea of life, did we not know that it is by comparing that we are enabled to distinguish, to judge, and to arrive at knowledge.

Life and putrefaction are, therefore, two contradictory ideas. The phenomena of putrefaction resulting from a series of peculiar attractions are modified in various ways, according to the nature of the animal substances which are subjected to it, to the media in which it takes place, to the different degrees of moisture and temperature, and even according to its different periods. The bones are the last part of the organized machine that become altered. In time, too, they become dried by the slow combustion of their fibrous part, and by the evaporation of their medullary juices. At last, reduced to an earthy skeleton, they crumble into dust; and our imagination may, as Hamlet says, trace the dust of Alexander, till we find it stopping a bung-hole.

“When the body of an animal is scattered in this manner to all the winds of heaven—dissipated through the air and the waters, and over the earth, until not an atom of it can be identified or even known, we must not suppose that there is one atom of it lost, or for one instant, amid all its changes, hidden from the eye of Omniscience; for we may be well assured, that, if it were the pleasure of the will of Him who made it, and who directed it, to say, ‘Return!’ it would return, and retrace all the steps of its progress\*.”

Among the various subjects which this view of creation—on the origin both of matter and of every kind of action which matter displays—brings to our consideration, is the resurrection of the body; but it is one into the particulars of which we cannot at present enter. We know, when the living action of the body has ceased, that the substantive matter of which it is composed is given up to the common laws of inorganic matter; but to know this, and to know the death of all animal life, or even all vegetable life, are very different matters. This is one of the dark pages of the book of nature.

Life, be it in animal or plant, is not organization, or the result of organization. The animal or the plant is not first made perfect

\* Mudie.



in all its parts, and then put into living action, in the same way as we construct a machine, and then set it a-going. The organization is the product of the life; and therefore the life must have the priority in existence. And because life is not substantive matter—not visible to our senses—not in any way to be estimated by weight or measure—it does not thence follow, that life has no existence; for, on the contrary, without it there could have been no organized being, any more than there can, in any other case, be produce without any producer. The inference from this is as plain and as obvious as any inference can be; and it leads us directly to the account given in the sacred volume—that not only life, taken in general terms, was part of the work of the Creator at the beginning, but that the wonders of His power reached and determined every kind of life. “God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind.”

“There is no study more interesting and instructing\* than the contemplation of a living body: it brings home to you the perfections of the great Author of your existence—it gives you the most striking instances of his power and wisdom—and it furnishes you with this just conclusion,—that the same power which formed continues to watch over and protect. If the geologist examines the structure of the earth, and considers the changes it has undergone, he concludes that all this is to bring about what is best for those who are on its surface. But then this is effected by operations so tremendous, and at such a distant period of time, that he is not able to imagine that the great Being who accomplished it can attend to so minute a creature as man.”

And if the astronomer contemplate the heavenly bodies, he finds their space so immense, so immeasurable, that he comes back overwhelmed at the idea of his own insignificance. “Earth,” to use the language of one, “appears like a heap of dust, like an ant-hill, in which some are carrying straws, and some food; but it is only a heap of dust.” And is this all?—Is this the only end of philosophy—to bring home to man his own insignificance? Now, I say that a proper consideration of the human structure corrects this idea. There is not a globule of blood that passes through a living frame but is retained in its course, in its character, in its place, by law; by the same law which holds the planets in their course; and the one is not more surprising than the other. Throughout the whole universe, the Almighty influence is seen in the small as in its greatest scale—the same power which can rend the mountain can revive the spirit of the mite, or call the

\* Sir C. Bell.



animalcula from its egg. And the very same action of heat which can burn up the fields, set the forests in a blaze, and shake the solid land with the rocking of an earthquake, and the fire and smoke, and volleyed stones, and lava flood of a volcano, can keep the life of a lichen upon the rock, and cause the lowly mosses to grow under the mantle of the polar snows.

Whithersoever we turn our attention, we find the same proofs of infinite wisdom, and the same demonstration of infinite power.

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### THE INTRODUCTORY LECTURE TO MR. MORTON'S COURSE OF VETERINARY CHEMISTRY.

[Continued from page 19.]

THUS, gentlemen, I have ventured on offering some advice, and I have laid before you the intended plan of my lectures. Under the first division, you will remember I purpose to consider the elementary substances which enter into the composition of medicinal bodies, and the laws which govern their union. This, as before observed, necessarily involves an investigation of the science of chemistry; but not in its extended sense shall I have to take cognizance of it, only as applicable to medicine. In other words, our first division will be the consideration of PHARMACEUTICAL or MEDICAL CHEMISTRY.

Custom has established the delivery of Introductory Lectures. They have their advantages and disadvantages. In my humble opinion, the latter decidedly preponderate. In them a hasty, and necessarily imperfect view of the subject is taken. Much is expected from them, and but little gained. It would be presumption, however, in me to deviate from the plan pursued by others. I shall, therefore, occupy the remaining portion of your time this evening, not as I have been wont, in giving you a detailed history of the science of chemistry, since that, at best, could be but very imperfect, and unattended by any corresponding advantages, but by taking a brief sketch of its progress, and then passing on to the benefits derivable from an acquaintance with it.

Dr. Franklin, who was a utilitarian, pertinently asks, What is the value of that science which is not applicable to some useful purpose? And the question of utility is certainly the touchstone by which the sciences must be content to be tried in this our day. To this test we will, by and by, bring the science of chemistry, and from it I predict that it has nothing to fear.

It has been observed, that "the highest achievements of human

wisdom have had their root in the lowest absurdities of human weakness, and the severest truths have sprung from the most ludicrous and exaggerated fictions of mingled folly and fanaticism."

We might elucidate this by remarking, that it has been stated music originated from a man at leisure, listening to the strokes of a hammer on an anvil.

Astronomy began with the shepherds of the East, who, while watching their flocks by night, fertile in their imaginings, traced the fancied existence of the different constellations that are now placed on our celestial globes. A perversion of this led to astrology, "that species of insanity once so prevalent all over Europe, which consisted in the casting of nativities and horoscopes, and questioning the stars of heaven as to the future destinies of the inhabitants of the earth." From this absurd, if not impious act, has arisen the science of astronomy; nor can there be any doubt but that the idle and ridiculous search after a substance—the philosopher's stone—that should convert all other metals into gold, and an elixir which should render life interminable, first pointed out and afterwards cleared the path which has conducted us to the admirable science of modern chemistry: a science which has become so valuable that the power of language is unable to tell its amount.

But although chemistry, as a science, may be said to be only of modern date, it perhaps was known as an art in the earliest periods of time, and possibly may be considered as coeval with the formation of man. I know not whether I am singular or right in the view which I have taken; but of this I have no doubt, that as soon as mankind became sufficiently numerous to constitute *society*, their common wants called into exercise their intuitive knowledge, and then chemistry, as an art, began to exist.

From the sacred writings, the oldest and best attested of all records, we learn that, soon after the fall of man, sacrifices were offered to the Deity. In the offering of these sacrifices we take for granted there was the enkindling of a fire. It is true, the principles by which this was effected may have been unknown to them, yet it was then, as now, the result of chemical action; and although it remained for after-ages to ascertain the cause of combustion, and its laws, and the changes which are effected by it in inflammable substances, constituting one of the most beautiful discoveries in the science of chemistry, yet their ignorance of all these invalidates not our position. Combustion was then as much a chemical act as it is now.

In the third or fourth generation from Adam, lived Tubal Cain, who was "an instructor of every artificer in brass and iron." At this early period of time—since very inconsiderable quantities of the metals are found native—some persons must have been con-

versant with the means of separating the metals from their ores, and, probably, with forging, welding, and casting.

There does not appear to be any validity in the argument brought against this, that the iron which the ancients were acquainted with was that known by the name of cast iron, from which few useful instruments could be constructed, and, therefore, all their tools were made of *copper*—called *brass* in the scriptures—since to obtain this, a knowledge of the method of separating the metal from its ores, and the smelting of it, was necessary.

The Eastern parts of the earth were indubitably first inhabited. The Indian nation existed before the Egyptian, which last was early famed for its learning, and the cultivation of the arts and sciences. Monuments of its grandeur exist to the present day; and they give to all modern works a character of insignificance. The pyramids will probably endure as long as the earth on which they are based. It is not unlikely that the magicians of Egypt effected their deceptions, as far as they were permitted to carry them, by chemical means. From the Egyptians Moses derived his knowledge, for “he was brought up in the court of the Pharaohs, and was learned in all the learning of the Egyptians.” Thus he was able to destroy the golden calf which Aaron had made, and to render it miscible with, if not soluble in, water. Now gold, we know, in its primitive or simple state, is not consumeable; yet Moses says that he “took the calf which they had made, and burned it with fire, and stamped it, and ground it very small, even until it was as small as dust, and he cast the dust thereof into the brook that descended out of the mount.”

It has been conjectured that he converted the gold into a sulphuret by combining it with sulphur, or, that he united it with the sulphuret of potash. In these combinations it would be miscible with water.

From the antient Egyptians, who, we have every reason to suppose were acquainted with chemistry, as an art at least, it passed to the Greeks. The Centaur Chiron was probably versed in chemistry, so far as it was known in those days. This personage is described as being a compound of a man and a horse; the head and body of a man being grafted on the shoulders of a horse, which arose from this circumstance:—The first colony of Egyptians that landed on the rocky shores of Thessaly, brought with them the horses which they had been accustomed to ride in their native country. The horse had not before been seen in Greece, and the inhabitants were unacquainted with its use and management; when, therefore, they saw in the distance men on horses' backs, they conceived the two to be one beast: nor is this illusion at all to be



wondered at, for the Peruvians made the same mistake when the Spaniards first landed on their coasts.

Chiron was celebrated among these horsemen for his knowledge of archery and music, and also of medicine. This would necessarily embrace some knowledge of pharmaceutical chemistry. He was acquainted with the properties of various plants and medicinal herbs, and, furthermore, he did not disdain to practise on brutes, so that he may be said to be the first veterinary surgeon on record, as well as the teacher and father of physic. Among his disciples was *Æsculapius*, who accompanied the Argonauts in their expedition to Colchis, probably as their medical adviser; for it is said that so successful was he in his practice, he restored so many to life, that Pluto complained of him to Jupiter, who destroyed him with his thunderbolt. His daughter *Hygeia* also practised the medical art, and with so much skill and success, that she was afterwards worshipped as the goddess of health.

Another of the disciples of Chiron was, as some interpret the mythology of those times, connected with the diffusion of chemical science. He was of royal descent, but had been driven from the throne of his forefathers. At length his birthright was promised to be restored to him on the accomplishment of some fearful feats, the last of which was to destroy the ever-watchful dragon that guarded the golden fleece, and to carry away that treasure. This, by the aid of *Medea*, the daughter of the usurper, and a magician, i. e., one skilled in the knowledge of herbs, and certain other natural phenomena, he easily accomplished. By the narcotic influence of some herbs the dragon was sent to sleep and destroyed, and the golden fleece carried away.

Some have imagined that this golden fleece was a treatise written on skins, one of the ancient methods of preserving records ere the art of printing was introduced—teaching how gold might be prepared by the aid of chemistry, for the original meaning of the word is the art of making gold and silver. It was called the golden fleece on account of its immense value. Hence the art of chemistry was conjectured not to be of human invention, but communicated by angels or demons to man. The word chemistry is first met with in a Greek writer who is supposed to have lived about the eleventh century. It is in the lexicon of *Luidas*, and the passage abbreviated runs thus: "Chemistry, the preparation of silver and gold; the books of which *Diocletian*, having inquired for, burned on account of the new projects of the Egyptians against him, so that no longer wealth might come to them from this art, lest, encouraged by it, they might be led to resist the Romans."

From the Greeks chemistry passed to their conquerors the Ro-



mans, by whom it was pretty successfully cultivated as far as related to the arts and the production of the luxuries of the table. They understood the preparation of wines and ardent spirits, knew the application of manures, and used asbestos to prepare an incombustible linen for preserving the ashes of the dead, distinct from those of the wood of the pile, in the performance of funereal rites. Driven from Europe by the inroads of the barbarians, it obtained an asylum with the Arabians, by whom the sciences were much cultivated, particularly about the beginning of the ninth century. From them it gradually found its way into Spain, and the then different Christian kingdoms, the progress Christianity was making being the means of its promulgation; for it is notorious that, as Christianity has prevailed in its purity, so have the sciences advanced. The disseminators were the zealous but misled Crusaders.

From the eleventh to the sixteenth centuries, the art, absurd as we now know it to be, of making gold and silver was studied in Germany, Italy, France, and England with considerable assiduity. The cultivators of it were called Alchemists, a name derived, according to Bryant, from *chemia*, and that word from Cham, or Ham, the Egyptians being deeply skilled in astronomy and geography, chemistry and physic. The syllable *Al* was prefixed by the Arabs, who appear to have been the first to reduce the art to form and order, and thus laid the foundation of scientific chemistry.

It has been remarked that alchemy may have suggested the chemical processes, but that the Arabians applied them to the preparation of medicines, and thus opened a new field for investigation.

The alchemists then took their name from the art or science they studied—alchemy, or the art of transmuting the various ignoble metals into gold. Their opinion of these substances was diametrically opposite to that entertained at the present day. They considered all the metals to be compounds—the baser ones possessing the same constituents as gold, but contaminated by impurities, and, these impurities being removed by their various processes, gold alone remained.

The substance to effect this separation was what they chiefly sought after, and to which they gave the name of the philosopher's stone. Nor were there wanting those who boasted of possessing it. Need I say that they had recourse to tricks in order to deceive the unwary? This is sufficiently proved by their travelling from place to place in order to sell the recipe. No man could need money if he had a talisman capable of converting all it touched into gold.

The delusion has now passed away, and yet, not many years since, some of its votaries remained, and in England too. In 1782,

Dr. Price, of Guildford, professed to believe in the transmutation of metals. In 1805, there died in his chambers in Barnard's Inn, in London, a professor of the same art; and as lately as 1833, Jean Claude Chabert, a Frenchman, was deeply engaged in the discovery of the philosopher's stone. You may, however, be pleased to hear that the discovery has at length been made, and that the power of the talisman is expressed in one word,—industry.

The science of chemistry, I think it has been shewn, thus had its origin in alchemy, and was much indebted to it; but in 1633 the Royal Society of London was incorporated, and thence arose the attempts to overthrow these and other equally ridiculous doctrines. The French and continental philosophers co-operated in this laudable work, and from these scattered but numerous torches a blaze of light has proceeded, which has dispelled every mist, and cleared the way to truth.

I have not ventured to notice the progress which the science has made in this our day, for the time would fail me; nor am I able to do common justice to it. Within these few years more discoveries have been made in it than in as many antecedent centuries. Entirely new views have been established of its laws; while the facts, as they have presented themselves, have awakened and received deep investigation. Indeed it may be said, that we know not whither its pursuit may lead, nor what a more perfect acquaintance with it may produce.

Chemistry, now become an experimental science, relies for its advancement on facts. The fancied theories which once deluded are no longer entertained. The cause of the phenomena that present themselves may be inexplicable, but the effects are seen; and, being seen, are rested on by its votaries. This favoured isle has produced a few bright suns, some of whom have set in glory. Among them rank a Black, a Brande, a Crawford, a Dalton, a Davy, a Farraday, a Henry, a Turner, a Wollaston, and many others. From these have emanated, as from so many centres, as many truths; and by them have been developed the immense mass of facts on which has been built the noble science of general chemistry. It must not be thought by you that this science is limited in its application. It is the very reverse; for it teaches the properties of the elementary bodies composing this our globe and all that is upon it. It inquires into the powers which affect, and the laws that preside over, their union. It examines the proportions in which they combine, and the mode of separating them when combined; and it endeavours to apply such knowledge to the explanation of natural phenomena, as well as to useful purposes in the arts and sciences.

Such being its objects, it necessarily becomes a branch, and blends

itself with all the other branches of natural philosophy; so that to well understand this division of science an acquaintance with many others is called for. The general laws of matter and the properties thereof we must be conversant with, before we venture on the confines of chemical investigation, for some of them are constantly opposing chemical action.

The influence of heat, and also of electricity, must receive the notice of the chemist, for these much influence his operations, if they are not the sole cause of all the changes that present themselves. Nor can he be regardless of the nature and properties of light, for chemical combination takes place frequently by its agency.

It has been justly a matter of surprise to many that natural philosophy is not more generally taught in our schools of medicine, since so many principles are illustrated by its laws. Thus we see many of the laws of hydraulics operating in every act of respiration, and in the circulation of the fluids throughout the body. The science of optics renders us familiar with the laws that obtain in that beautiful and delicate organ the eye, in which we have a microscope and a telescope so skilfully combined, that the ablest genius is baffled to form such an artificial apparatus; while acoustics tell us how hearing is effected, which otherwise would be perplexing to most of us.

Indeed, in many more instances than these could it be shewn that the various divisions of natural philosophy come to the aid of chemistry, and chemistry, in its turn, extends its assistance to them, and, in one way or another, to all the useful and ornamental arts and manufactures: so that, in the beautiful language of Cicero, "the arts which have reference to human life have a natural alliance among themselves, and hold each other, as it were, by the hand."

In conclusion, let me endeavour to remove from your minds an erroneous impression, too prevalent, that for the purpose of studying chemistry complicated and expensive apparatus is necessary. Nothing can be more delusive. It is only its principles that you require, or can hope to be in possession of; and these may be gained with an apparatus that would not cost more than a few shillings. A few empty Florence flasks, some strips of glass, glass tubes, a piece of wire coiled in a double spiral form for a stand, a lamp made from an ordinary phial, a wash-hand basin, a plate or two, a few wine glasses, and a perforated saucer, will be all that is necessary. I would advise every one of you to be thus furnished, and to subject to the test of experiment the statements which you may from time to time hear made; and, if you like, repeat all the experiments which you see me perform. By so doing, the study of the science on which we are about to enter will be rendered both



pleasing and easy to you, while its truths will be written on your minds as with a pen of adamant.

You will naturally expect that I should point out to you the books which will be most useful to you in your study of chemistry. So many valuable treatises have issued from the press, that I feel some difficulty in making a selection. I would advise you to read Dr. Paris's Medical Chemistry, for it was written solely for the medical student; and it contains much important and interesting matter, although it must be confessed that it is not so recent a publication as could be wished, and does not contain all the recognised doctrines of the present day. Brande's Manual of Chemistry stands high in my estimation for its clearness and simplicity of arrangement. Turner's and Graham's are more recent publications; and, besides these, you have Parkes's Catechism, Thomson's Outlines, Reid's Chemical Text-book, and others; so that I must almost leave you to select your own chemical library—the truth being, that the only difference in most of them is in size and manner, and not in matter. I have taken neither of them as my text-book, my remarks not admitting of it; but I have collected from all.

Seneca says, the bee that sips from every flower, carefully disposes what she has gathered into her cells. I know that I have not evinced the industry of this insect; yet I can truly say, that I have been anxious to collect all the useful matter I could obtain, both for your benefit and my own.

Your indulgence I may have hereafter to claim. I have many duties to perform; nor must I allow them to clash. You will, I trust, always find me at my post; and if, at times, you should perceive me tripping, deal gently with me; and remember, that I am only a private although a willing teacher, solicitous to communicate the little I know, and ever anxious to ensure your esteem.

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## ON ABSCESS.

*By Mr. PRITCHARD, of Wolverhampton.*

I FELT much pleased with the perusal of two papers in the last VETERINARIAN, on the subject of abscess, one from Mr. Mayer, the other from Mr. Hayes. It is on diseases of this kind that we derive little or no information from authors of general treatises, and on which practitioners even at the present day require much practical knowledge.

The veterinary writers of the last century, at least some of them, professed a tolerable share of information on the nature and



existence of most of the diseases of the horse, and their remarks are far from being unworthy of notice ; but their pathology, for the most part of it, constitutes the worst portion of their works ; and notwithstanding we have progressed considerably in this part of our studies, and made extensive acquirements, we still lack much practical information. It is for this reason I hope to be excused a few remarks on the nature of this secondary form of disease designated abscess ; not that I presume to offer any thing new, but that I may, in a trifling degree, share in the duties of my profession, and lend a helping hand to support our only and indispensable veterinary Journal. I consider this a day of which we ought to be highly proud, to know that a most valuable source of acquirement exists amongst us, in the full establishment of an Association having for its object the advancement of true science ; and, more especially, that the result of its meetings, and the subject and substance of its discussions, has a medium for dissemination. I for one feel much gratified with this our present position ; and begin to think myself more than formerly honoured, by being a member of a profession now rapidly advancing, both in rank, estimation, and respectability, and feel spurred to do something, however trivial, for its benefit and support. And now to the subject of abscess.

I define this disease to be a collection of purulent fluid, deposited in the structure of an organ or part, but never an original disease, being invariably the effect of inflammatory action, produced by irritation of the part in which it is seated. The abscesses with which we have most to do are the phlegmonous, or acute, and chronic ; one which I shall call symptomatic, and another the consecutive abscess. In the inflammatory abscess, the temperature is increased, and the part tumefied in proportion and degree with the injection of the circulating fluid into the irritated vessels, and upon the violence of the irritation the increase of fluid depends. At the commencement of the inflammatory action, the blood, or any portion of its constituent, does not proceed beyond the vessels through which it has been conveyed ; but after a time, and when the tone and vital cohesion of their extremities is much weakened by distention, together with the tissues in which they circulate, some portion of the more fluid part of the blood escapes into the cellular structure of the affected part, rendering it more firm and dense by infiltration and combination with its constituent elements. While this change is taking place in the part inflamed, the vital elasticity of it is diminishing, the tissues soften, and are easily torn by pressure, or lacerated by ligature. Provided the inflammatory action is not by some cause stopped here, the diseased part quickly passes from this dense but friable state into a pulpy condition, by the increasing extravasation of the fluid parts of the blood, and occa-

sionally of its colouring matter; the infiltrated fluid so separating and uniting with the tissues of the part, as to destroy all traces of its former organization. In the centre of the inflamed structure this softened pulpy mass is changed into pus, not by a conversion of the tissues themselves into fluid, but by fluid from the capillaries, dissolving, in some degree, the structure or membrane into which it is poured, and the cellular tissue being softened and disorganized; the vessels of the surrounding structure, not exhausted of their vitality, pour out coagulable lymph, which forms a barrier to the opposing fluid, and prevents its extension: at the same time the increasing effusion of purulent fluid is solidifying the cellular tissue, producing pressure in all directions; and the further deposition of coagulable lymph, causing an increase in the walls of the abscess, are aiding to accomplish this end. In this manner the further disorganization and defilement of the neighbouring structures is prevented; effects which sometimes happen in those constitutions where the vital energies, and state of local action, are incapable of the formation of coagulable lymph, by which the defence to extending disease is formed. The dissemination of the minute accumulations of sero-sanguineous or sero-albuminous matter, especially in the softest, and first and most intensely inflamed part, appears to be the first step of the suppurative process. The fluid gradually becomes more plentiful, and thus these minute collections enlarge, advance towards each other, and ultimately become one cavity, by the tissue constituting the partitions between them disappearing from softening and disorganization of its substance.

As the disease progresses, the thin albuminous fluid contained in the cavity becomes pus; the fluid loses its colouring principle, the shreds of the cellular tissue are fully dissolved, and the pus may be said to be thoroughly compounded; and when the whole process is complete, pus constitutes a peculiar fluid, differing in and possessing specific characters sufficiently distinguishing it from every other fluid of the body.

Pus, taken from an abscess such as I have been describing, fully matured and elaborated, on examination will be found to possess the following characteristics:—in colour it is whitish, and similar in appearance to cream; agreeable to the smell, unless exposed to the air. Its touch is smooth and soft, something heavier than water, and but partially soluble in that element; homogeneous, friable when dried, but does not coagulate, nor does it readily run into putrefaction; and of itself produces no irritation in the containing tissues, unless exposed to atmospheric influence. Microscopic examination gives minute colourless globules, like unto those observed in *the blood*, and a colourless fluid in which the

globules float. In veterinary as well as human practice, it is often of consequence to distinguish pus from mucus secreted by an inflamed mucous membrane, and some specific character established for this purpose. The common test is, the circumstance of mucus swimming on the surface of water, whilst pus, from its specific gravity being greater than water, sinks, and becomes partially mixed with it; and, provided our history of the disease, together with the several attending phenomena is correct, by this test we are enabled to decide. But there are cases in which this test would not be sufficient. The mucous membrane of the bladder, for instance, in a state of irritation, secretes a fluid which always sinks in water, yet at the same time very much differing from pus in character. Inflamed mucous surfaces also secrete a fluid, in every stage from a frothy watery consistence or albuminous and viscous mucus to a homogeneous, friable, cream-like matter, and more frequently to a muco-purulent liquid, having the appearance of both mucus and pus in a greater or less degree. The best manner of testing these two fluids is to press them separately between two plates of glass, and afterwards separating the plates: the fluid of pus will attach itself to the surfaces of the glass without any adhesive elasticity, and more in the form of small globules, whilst that of mucus is exceedingly viscous and adhesive, a property of which pus is wholly deprived, and serves to distinguish, in a very intelligible manner, the difference of character in the two fluids, and that more completely than any other feature they present. If farther test is required, pus may be dissolved in dilute sulphuric acid, and from which, on the addition of water, a plentiful precipitate is produced; but when mucus is thus treated with dilute sulphuric acid and water is added, whitish filaments form on the surface of the menstruum. In a part undergoing the early process of suppuration, and the intersecting tissue forming the partitions between the incipient purulent collections is losing its vitality and dissolving in the fluid effused, the more dense tissues, and the nerves and vessels traversing the part, resist for a time the disorganizing process, constituting fræna or isolated bridles and attachments between the separated walls of the cavity. The internal walls of the abscess are generally close in texture, more or less reddened, and tomentous; produced by the effusion of lymph and accumulated fluid, solidifying the parts by the exercise of its distending action, so that the inclosed liquid is completely separated from the surrounding textures. The lining membrane of the cavity thus produced has all the appearances of a mucous surface, especially if the grey layer of pus is removed. Externally this membrane is intimately adherent to the adjoining structures, whilst its internal surface is opposed to the purulent accumulation. Its density and thickness depend on the slowness of the formation



of the abscess and the time it has existed, and the more perfect the solution of the tissues and maturation of the abscess, the more it approaches the circumference of the inflamed part. In those situations where the cellular membrane is plentiful, the tissue in which abscesses form, this cystic sac arrives at a high degree of resistance and firmness, whilst in organs or parts but sparsely possessing cellular tissue, as the brain, &c., it exists a long time in the condition of a reddened pellicle, with difficulty to be distinguished from the healthy tissue to which it adheres. The firm dense cyst is not commonly found in the acute inflammatory abscess, its formation being too quick to allow of much condensation and thickening, as is generally produced by slow inflammatory action. The cystic membrane seems to possess other functions than a boundary wall to the cavity, preventing the defilement of the surrounding tissues by the purulent fluid contained in them; exhalation and absorption is proceeding in its surface, the inclosed liquid is incessantly renewed, its property qualified, and decomposition prevented. The influence of life is not entirely apart from it, but the vitality of the surrounding textures is in some degree extended to it; indeed, all fluid collections in organized parts participate in the vitality of the adjoining tissues, though in a weak and obscure degree. The fluid contained in abscesses is augmented or lessened, grows thicker or more fluid, or is occasionally changed by substances absorbed or injected into the circulation, through the medium of this vital envelope. It is through the connexion of this membrane, by an intimate sympathy with the principal centres of life, that the stimulating of some of the important viscera acts upon them in so marked a degree, and the application of remedies to these organs, skilfully made, frequently assists in promoting the absorption of the liquid contained within them.

In the chronic form of abscesses the progress of inflammation is slower, and the symptoms of irritation, both antecedent and existent with the disease, are proportionably less. We occasionally observe fluctuating tumours, superficial and deeper seated, and varying in size, unaccompanied by much apparent increase of heat or signs of pain, either preceding or succeeding their formation. Collections of matter in abscess is of the slow and indolent kind, originating commonly from a continued low degree of irritation, or from a repetition of so low a grade of excitation as barely to move or influence the sensibility of the part. They take place in subjects or parts possessing a feeble vital resistance and deficient restorative power—unlike the abscesses I have been previously describing, which proceed from an inflammatory action of a more or less acute character, the effect of active stimulation, and affecting the system in an active manner, in a greater or less degree. Sometimes the irritation of the part affected is of so low a grade as scarcely to



afford a perceptible injection of the vessels; and instead of the abscess originating in several distinct points, a single collection of fluid appears in one or more of the areolæ of the cellular tissue, possessing from the first an evident fluctuation. The appearance of the parts affected is more a simple deviation from the normal nutritive action, in some cases, than that of true phlogosis. The vital endowment of the parts, instead of attracting the nutritive particles, and the vessels imparting them in suitable condition, and secreting a liquid appropriate to the parts in a state of health, are altered to a certain extent, and fail to accomplish this end; or, in other words, the peculiar fluid furnished by the vessels, and apparently consisting of the particles or globules of the blood, would, under the influence of healthy vital endowment, have been applied to the nourishment and growth of the tissues, and the exhalation of the aqueous fluid destined to lubricate and facilitate their functions. The pus formed in this variety of slow abscess, and under the influence of this low grade of irritation, is commonly of a serous quality, yellowish colour, and transparent; containing albuminous flocculi, or matter of a fibrinous nature. Occasionally shreds of a cellular-like substance are observed floating in the fluid. When the formation of the abscess is very slow, its consistence is more like unto liquid honey, and more opaque, and there seems a connecting link between this tumour and the steatoma, and differing but little from abscesses divested of active inflammatory action; only in the consistence of the fluid they contain. The redness and vascularity external of the cyst is trifling, and the integument immediately over the tumour, through which fluctuation is easily detected, is moveable, free, and unaltered; the whole morbid action is centered and apparently confined to the diseased tissue enclosing the morbid fluid.

[To be continued.]

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*To the Editor of "The Veterinarian."*

Sir,—THE enclosed letter (perhaps with some slight variations in recopying) was despatched to you for the last November number; and I thought little of its non-appearance for a time; but, at length, it seems certain that some mistake has occurred in its transmission, for which I cannot account, but sincerely regret the delay.

Yours, &c.,

CHARLES CLARK.

Veterinary Infirmary, Giltspur Street,  
Jan. 6, 1839.

[The paper referred to never reached the Editor. He is sorry for it. No letter, addressed to him, *at his residence*, can well go wrong.—ED.]

*Mr. CHARLES CLARK in reply to Mr. MAYER.*

Sir,—IN the remarks I have to make on your letter in the last September number of *THE VETERINARIAN*, I shall endeavour (particularly after the vexatious delay which has occurred) to be as concise as possible. I am sorry that yourself and the blank meeting of veterinary surgeons should be placed in so awkward a situation as that paper represents you to be. Your assertion seems almost incredible, that so many talented gentlemen could have perused *THE VETERINARIAN* for months previously, have seen therein a little obnoxious note at the bottom of a page, have convened a meeting, and passed resolutions to call the original author of the said note to an account, and yet should have entirely overlooked the fact, that the whole of the correspondence and matter to which this note referred was but a verbatim copy from the *Lancet* medical journal, of 1829.

The name of the *Lancet* appears in nearly every page of the articles copied from it into *THE VETERINARIAN*, and is even very conspicuous in that page to which the said note is appended; and Mr. Morgan also, in his introductory letter to the correspondence, at page 94, observes, “refer to the *Lancets* of February, March, and May 1829;” and adds, “I have sent a copy of these letters, bound, for the library of the Association.” Now, if there are really more than one pair of eyes engaged in this business, how could you all have avoided seeing something of this circumstance, at which you now express “*ignorance and surprise?*” The first part of the controversy was republished by the instigation and desire of Mr. Morgan himself; an interval of a month elapsed, and finding that my final letter to Mr. M. was withheld, I did not re-write a single line of it, but purchased the proper back number of the *Lancet* and enclosed it to the Editor of *THE VETERINARIAN*, requesting that, as the subject had been re-opened, it might be fairly concluded. Had I again written, or even read the article, it is not unlikely I might have omitted the said note, not from any doubt of substantiating its allegations, but because my leisure for such a controversy is less than it was ten years ago. But then it would not have been a correct copy from the printed text of 1829, and, therefore, liable to misrepresentation; nor do I, on fair terms, shun the encounter. No; but every unprejudiced reader will see, that it is yourselves, gentlemen, who, by an inconceivable but very convenient blindness to the palpable point I have just explained, are seeking to *pass aside* the question on finding that it meets a ready response. You would deprive me of my resources—disarm me of every weapon that was available—forbid a reference to every “*book, pamphlet, and even letter,*” and, to prove my assertion in 1829, you wish to limit me to *facts* deduced from Pro-

fessor Coleman's opinions within the present year (or session), "*altered and modified*," as you declare them to be. If his opinions are changed, and I believe them to be so, at least in the strength of their expression, let his cause receive the full benefit thereof, and inconsistency would here be his greatest praise: but is this the right light in which to consider the career of one who, by his doctrines and precepts, has exercised the highest control over the profession, our noble patients, and the public, for a period of nearly half a century; and which doctrines are still influencing, in some degree, every diplomatized V.S. in England, and, in many instances, to the injury of their practice and reputation?

Will such an inquiry produce an answer to my assertion in 1829? You know full well that Professor Coleman has not published a line for very many years—that his "*lectures*," which alone can be looked to as "*proof of his present opinions*," have never been in print; and "*altered and modified*," as you confess them to be, you require me to found my remarks upon such unsubstantial grounds. You say, "Finally, we will not debate with you the terms upon which you accept our challenge;" whilst in the same paragraph you dictate your own terms; and I reply, that I will not be bound to any such "*modified*" consideration of the theories (false or not) which have pervaded the school of St. Pancras since the death of Professor St. Bel, to the exclusion of every improvement which was not forced upon it by the pressure from without.

I will not be debarred from the use of any or all of the books, pamphlets, letters, and parchments—and there are more than you perhaps are aware of—which have influenced the welfare of my profession since its date in this country.

And as your last paragraph contains a virtual renunciation of your first resolution, I am compelled to look for its cause; but being denied the power of speaking, soundingly *as you do*, in the plural number, allow me to inquire respectfully, Gentlemen, have you consulted Professor Coleman as to the course you are pursuing, as he is certainly the party most interested in the controversy? and has the word to "*retreat*" been heard from head quarters?

You seem very desirous to repudiate the obvious construction which his acuteness would immediately fix upon the terms "*altered and modified opinions*" in your first resolution, and which I could not but observe upon.

The next month will commence a series of articles in direct proof of the allegation made ten years since; and permit me in the meantime to observe, that if you are a powerful secret combination opposed to a single individual, it would be only generous and becoming, for the future, to abstain from personalities, which retard argument, and which he has neither the power nor the wish to retort.



## ON DRENCHING HORSES, IN REPLY TO PROFESSOR STEWART, OF GLASGOW.

*By Mr. MARKHAM.*

IN THE VETERINARIAN for the month of September in the last year, a letter from Professor Stewart, of Glasgow, was inserted, warning your readers to beware of *drenches*, and warning every practitioner "never to give a draught," or *drink* as it is commonly called, "to any horse unless he thinks that he will die without it." As this was perfectly new doctrine to me, I was unfortunately induced to offer a few observations on this unqualified condemnation of a practice from which, after a pretty fair opportunity of observing it, I had never seen any harm result. I am not aware that I used any improper or unbecoming language. I had but one motive for writing, and that was the lively interest which I felt in the onward progress of veterinary science. I was afraid that this sweeping, and, as I thought, erroneous condemnation of "*the drink*," might compromise some practitioners who were in the occasional, or, perhaps, frequent habit of administering medicine under this form. If I knew myself, I was actuated by the best feeling. What, then, was my surprise to find myself attacked in the most illiberal and scurrilous way! There seems to be a mixture of contempt and malignity. I have neither "ability" nor "experience." I am not able "to dispute or to confirm" the matter in question. "I begin to dispute before I have learned to understand." "I am a new student," with whom "he does not think it useful to argue." "I must listen until I understand; and, after that, I must get some experience, before I attempt to dispute."

I leave Mr. Stewart to discuss this matter with his own students: although, were I one of them, I know what would be my feelings, and the course which I should probably pursue; but as a stranger, and addressing him certainly in strong but not ungentlemanly language, I ask him, and I ask all your readers, "Where is the distance throws me back so far, I may not boldly speak in right, though a *Professor* will not hear me?"

What was my object? It was to protest against the *new theory* of this professor, as to the extreme danger attending the administration of drinks. As long as I have known horses, and that is now a considerable number of years, veterinary practitioners were guided by certain circumstances connected with the horse, or oftener with the solubility of the medicine, as to the form in which it was to be given to the patient; but it was reserved for my opponent to paint the harmless drenching bottle with *twelve* "mortal murders" in its neck, making our



“Knotted and combined locks to part,  
And each particular hair to stand an end  
Like quills upon the fretful porcupine.”

It was against this new bug-a-boo I was contending.

The only argument brought forward by the Professor, is the account of twelve horses to which drenches had been administered; of whom eight died before the 10th, one on the 11th, two on the 14th, and one on the 16th day. I stated that this was no proof at all of the danger of drenches. The inflammation set up by them in the bronchi or lungs, if any portion of the mixture had entered those organs, would much more speedily have run its course.

“But then,” asks the Professor, “if the drinks did not kill the horses, what did?” I reply, “Most probably the disease which existed before the drinks were given, and which the drinks were not able to cure.”

Then I am accused of putting some words into *italics*, “as if I were pointing out something very important.” I thought that I was so. I was directing the attention of the reader to a system of neglect which I did not understand. The third case says that, “A horse got a draught, and died—mind—*without treatment*, on the fourth day.” In the fourth case, “Another horse got a draught, coughed violently, received *no* treatment but one bleeding, and died on the *sixteenth* day.” I did intend, by putting certain words into italics, to direct the attention of the reader to that which I thought was very important—far too much so to please me, or the Professor either, if he will seriously reflect—first, that the poor animal, in the fourth case, was suffered to linger sixteen days, without any attempt to relieve it, or arrest the progress of disease, except one bleeding, and then the lame, and illogical, and impotent conclusion, that the horse died, not from neglect—shameful neglect,—but from the effect of the drench.

I must beg to ask the Professor, Did he attend those cases previously to the drinks being given; and how came it that these horses were so scandalously neglected?

These cases, however, are no proofs at all that drinks are dangerous, as thoracic diseases do very often appear after others have been subdued, and without any drinks having been given.

Professor Stewart says that he presumes I am not a veterinary surgeon. I candidly admit that I am not. Yet I will yield to few, as I shall presently state, in the favourable opportunities I have had of acquiring some knowledge about horses—I will yield to no one as a sincere admirer of, and a well-wisher to the profession; and I hope yet to live to contribute my humble mite towards its onward progress.

But to return to the subject, from which I may, perhaps, be forgiven for deviating one moment, in self-defence.

The Professor says, in his "Letter to a Student," in the same number with my letter to him, "I am content to rest my defence on the impossibility of giving a couple of pungent or *disagreeable* draughts to each of two hundred horses, without producing bronchitis in seven or eight of them. I affirm that no man can do this, take what care he will."

Well, then! this gentleman's defence is perfectly at an end; for I will prove, by facts, that what Mr. Stewart affirms to be impossible has been done, and that such drinks as are usually given are not at all dangerous, if proper care is taken, even although they may be composed of the most nauseous and pungent ingredients, aloes or ammonia.

One of the largest horse establishments in Europe, is Messrs. Wimbush, Deacon, and Co.'s, near Belgrave Square, London. The sick horses are all under the superintendence of Mr. Mavor, V.S., residing in New Bond Street.

In the summer of 1836, when the influenza was raging in London, the sick horses came in so rapidly upon us that we determined to note their number, and the commencement, progress, and termination of each case; and between the 3d of March and the 28th of September, there were 127 cases of influenza.

Now, *every one of these horses had draughts given to them*, and some of them as bitter and pungent as Professor Stewart could wish. A draught was administered, night and morning, and sometimes three were given in the course of the day, until they recovered, which usually was from six to ten days. A longer time elapsed before a few of them were convalescent. There were 127 patients thus treated, and in not one of them did the slightest chest-affection remain. At no period of the disease were there the slightest symptoms of bronchitis, but they shewed great debility—the natural consequence or concomitant of influenza; but from which they gradually recovered in less than ten days, and, in the course of a fortnight, ninety-seven of them were at work again. The others were sent to the farm; and they came back again in about three weeks as fresh as possible.

Here, then, at the lowest calculation, were not merely Professor Stewart's 200, but 1600 *drinks given*, and—I repeat it—some of them disagreeable and pungent enough, if aloes and ammonia could make them so, and without the slightest harm arising from them, for not one exhibited distress after the drink; and in not one did the slightest chest-affection remain.

I have stated these cases, because all of them were chronicled.

This administration of drinks, however, is the general practice with us. I have seen thousands of them given, but I have never seen any harm arising from them; at least, I have never seen bronchitis, much less death, as their result.

I admit that Mr. Mavor is a man of very great experience; he is in very extensive practice, and deservedly stands high in his profession; and all this was in favour of the horses: but still they had the drinks; and if drinks were as dangerous as Mr. Stewart would have the world believe, neither Mr. Mavor, nor any one else, could have prevented the access of bronchitis and of death.

I flatter myself that even Mr. Stewart will be convinced that the danger of which he was in fear exists nowhere but in his own imagination. The eight horses of which he speaks either died of bronchitis brought on by various causes, or they were suffered to droop and die without treatment or care, when, probably, the greater part of them might have been saved. This, however, is not the question at issue. Mr. Stewart's 400 drinks are quadrupled, and not a horse dies or is injured. His defence, therefore, completely fails.

I will not enter into any comparison as to the general propriety of the administration of balls or drinks. I only contend that the latter have been old and faithful servants, and must not be disposed of in the summary way in which the Professor would deal with them. In cases of tetanus, when the mouth is closed and balls cannot be administered, liquids may occasionally be introduced into the mouth. In cases of constipation, and in cases of superpurgation, one drink is worth many a ball, on account of the speediness and the certainty of its action. The hours which may be gained at these times by the use of the old drench are often golden hours.

In inflammation of the lungs I have, again and again, witnessed a far quicker, and more desirable and more durable impression made by the medicines being given in a liquid than a solid form. But I will not press this, nor will I enter into a consideration of the objectionable points which his second letter, not addressed to me, contains.

I am sorry to see this gentleman in such a sad ill-humour. It cannot serve his cause, nor can it benefit the profession.

He desires me to "tell him what I think." Then, I do think that his doctrine about drenches, coming from a person standing so high in the profession, and expressed so strongly and so unguardedly, is likely to do a great deal of mischief. I do likewise "think" that the terms "sculking coward," "practised liar," "canting hypocrisy," savour a little too strongly of the vulgar tongue, and are neither becoming an instructor of youth, nor the representative of the veterinary profession in the Andersonian University of Glasgow.



I furthermore "think" that Mr. Stewart is inexcuseably wrong, when he broadly says in one paragraph of his letter, "We are liable for the price of every horse that our draught destroys;" and afterwards, that "he who gives a draught when a ball will do, is answerable for the horse, if the draught either kills him or makes him broken winded." If it had been true that draughts are somewhat dangerous things, perhaps it would not have been quite kind to have armed a discontented and unreasonable employer with weapons to which he probably would have recourse, right or wrong, and wrong a hundred times oftener than right. I do not "think" that this is kind to his pupils, or to the profession; but when the whole danger is a mere crotchet of his own, I do "think" that there is little or no excuse for him. The poor veterinary surgeon has oftentimes enough to contend with when he happens to lose a patient belonging to some dissatisfied or peevish person. "You have been drenching my horse," the owner will say; "and you have killed him by drenching him, and I shall expect you to pay me what I gave for him. Mr. Stewart was right—the Glasgow Professor says that drinks are dangerous things—and they have killed my horse:" and so the poor veterinarian loses his bill, and loses his employer, and loses the patronage of many others, and has, besides, a sum which he can hardly afford, unjustly to pay. These would be every-day occurrences. What veterinary surgeon in extensive practice could stand against them. It matters not that this diatribe against drenching is mere nonsense. Many a bystander, and many an unfortunate employer, would believe it, and it would be only at a ruinous expense that he would be able to rebut it. An unfounded prejudice like this would annihilate the whole profession in less than a century. Therefore I do "think" he is, here, perfectly inexcuseable.

"I have now, I expect, done with Mr. Markham," says the Professor: I have perfectly annihilated so puny an opponent. I have always thought—but that, perhaps, was another of my foolish "thinkings"—that professors were, *ex officio*, gentlemen, and that foremost among the qualities of a gentleman were courtesy and civility. Let that pass! Mr. Stewart may have done with me; but has he done with the profession, the frequent practice of most or all of whom he impugns, and whom he recklessly exposes to the possibility of many painful circumstances.

Has he done with the "students," with whom he does not think it "useful to argue"? Probably they, like me, would readily acknowledge and admire his talents when usefully directed; but they will also expect and enforce an observance of the common courtesies of society.

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## COMPTE RENDU OF THE PROCEEDINGS OF THE ROYAL VETERINARY SCHOOL AT LYONS, DURING THE SCHOLASTIC SESSION OF 1836-7.

WE will range under two divisions the diseases which will occupy us in this *compte-rendu*—the one comprehending the affections which appear to us to depend more or less directly on atmospheric influence and the changes of the seasons, and the other on certain morbid states, purely accidental.

We have to congratulate ourselves that the general health of our domesticated animals was not much disturbed in the course of that session, although a destructive epidemic, as regarded the human patient, ravaged a portion of the country, and our locality especially. We can truly say that, at the period when the cholera prevailed at Lyons, there were brought to us for consultation, or received into our hospitals, fewer animals than during the same period in any preceding year.

Glanders and farcy, which ordinarily appear most frequently in cold and wet seasons, have been little known; except that one of the corps of cavalry in our garrison experienced some losses from the first of these maladies, attributable to the long route which they had been compelled to take, in order to reach Lyons, and the bad state of some of the stables which they occupied after their arrival. To this should be added, that these losses were confined to old and worn-out horses which were about to be discharged. The other corps in our garrison experienced very few losses, either from glanders or farcy. Our school availed itself of the opportunity to institute some new experiments on the power of certain therapeutic agents over these diseases of the horse, and especially the first of them: but it is compelled to confess that, to the present day, it has not discovered any specific or other mode of treatment, from which have resulted durable, and consequently valuable, curative effects. There have, indeed, been several horses in our stables, in whom, after some months' residence among us, every symptom of glanders has disappeared, and they have regained their good condition, and their former capability of work, and have returned to the ranks; but they have soon sickened again, and died. Two or three only continue to preserve their recovered health.

As to farcy, when it has not been complicated with glanders, the apparent success of our treatment has not been of such frequent occurrence, but it has been more to be depended upon. The question of the contagiousness of this malady being, to the present day, a subject of dispute among us, we have instituted some new experiments with a view of some satisfactory settlement of the

question. An ass and a horse were submitted to experiment. The former of these animals is not apt to be affected by this disease. We selected one that was twelve years old, and apparently healthy and strong, and by means of a large lancet we inserted into his loins, on both sides, some laudable pus, obtained from tumours that had passed into the state of abscesses, in a horse that had farcy more than a month. No appearances of inflammation were discoverable around the punctures when, on the fifteenth day, the animal died.

The other subject for experiment was a little *bât* horse, six years old, that appeared to be in good health when he was quiet, but that could not be trotted without exhibiting sad heaving at the flanks, and distress. We punctured him in four places on each side, using matter taken from the same horse. This was on the 10th of April. Twenty days after the operation, two of the punctures that had apparently healed, became enlarged. The lips of these minute wounds again opened, and the parts became red and tender. The tumour continued to increase in size, and, soon, a small quantity of puriform matter began to be discharged. Four days afterwards, the same process commenced in two other of the punctures. About the forty-eighth day these four tumours had become as large as a nut. Ramifying from these points, several distinct, prominent cords were travelling over the croup, and here and there were prominences or buds which became ulcerated. Five or six days afterwards the farcy eruption began to spread over other parts of the body. A line of them having appeared in the neighbourhood of the left glosso-facial vein, the submaxillary lymphatic glands on that side began to enlarge, and towards the end of the month of June, there was a slight discharge from the left nostril. In July the discharge from the pituitary membrane had ceased—the swelling of the ganglions had subsided, and the farcy tumours having suppurated, had been converted into ulcers. There were few parts of the body—the limbs excepted—which had not become the seat of successive farcy-tumours at the commencement of August: but the loins, the original seat of inoculation, were the parts in which the inflammation was most intense.

This poor fellow is yet living, and, although sadly emaciated, he preserves his appetite, and looks likely to live for some time to come. We shall have more to say about him in our next report.

Rabies has not been more common than usual in the dog during the cold and wet periods of the year; but the variety termed dumb madness has mostly prevailed. This last form of it is generally characterized at its commencement by an alteration in the sound of the voice: the bark is cut short and sharpened in its tone—there is a peculiar kind of inquietude about the dog—a vague nervous

distress—the throat becomes tender, and the jaws are spasmodically dilated—the buccal membrane, thus brought into continual contact with the air, becomes dry, and of a brown colour—the patient experiences, every moment, singular nervous tremblings—is very accessible to cold; has great difficulty in swallowing even liquid, although he eagerly and incessantly seeks for it. Every one knows that in this form of the disease, as well as that which is termed furious madness, a cure, whether spontaneous or effected by the aid of art, is exceedingly rare. In the course of this year, however, we have had the opportunity of witnessing two instances of cure—one in a dog belonging to an officer of the garrison, and the other in one belonging to an inhabitant of Lyons. No remedial means were used with regard to the first: the other was bled in one of the saphenas, and an obstinate constipation was removed by the use of emollient injections.

Two monodactyles—a horse and an ass—died in our hospital in consequence of rabies communicated by the bite of a dog. It was not known in what part the second of these animals was bitten: the first was wounded in the lip. He was brought to our infirmary on the 7th of June, was severely cauterized with the red-hot iron, and then placed under surveillance until his death, which occurred on the 20th of July, forty-four days after the bite. The wounds inflicted by the cautery were healed on the fifteenth day, and the animal appeared in excellent health until the 17th of July.

Beginning to reckon from this day, there was a melancholy expression of the countenance—the head was depressed, and the appetite began to fail. We thought, at first, that there was some intestinal affection, and we placed him on a restricted diet, and ordered that aperient injections should be administered. Towards evening he hung back from his manger, and had a staggering gait, referrible to his hind limbs. He lay down during the night.

On the following morning it was impossible to get him up. His loins were evidently tender—he had palsy, but sensation remained, for he shrunk when he was touched with the point of a lancet.

On the next day, he endeavoured to bite the pupil who had the care of him. He would not suffer any one to approach him without attempting to seize them. He did not exhibit any dread of water, and died on the 20th of July, without any considerable nervous agitation.

The carcass was examined seven or eight hours after death. There was a vivid redness of the mucous membrane of the right sac of the stomach, which contained only a few small parcels of food. There was a similar redness in different parts of the small intestines. The other abdominal viscera were in a healthy state, as were those of the thorax. The brain was of its ordinary con-



sistence, except that the right lobe and the floating portion of the plexus choroides were injected with blood; but this may probably be explained by the circumstance of the animal having remained on his right side from the time of his death. The spinal canal was explored with care through its whole extent, but there was no lesion, except that the cord had lost a little of its consistence in the cervical portion.

As for the ass, no one would have expected the existence of rabies, except that between the thirty-sixth and the fortieth day from his having been bitten by a dog, he kicked violently, and without provocation, at a little girl that led him. He was brought to the veterinary school on the 23d of May, securely fastened behind a carriage. On his arrival, he took, from time to time, a mouthful of hay, and expressed no dread of water, no nervous agitation, no shivering; but he frequently brayed with a peculiar hoarse voice, and rushed forward open mouthed, to bite either men or animals that came near to him. He was most eager to get at the dogs, although before he became ill he had never exhibited any antipathy towards them. Profiting by this propensity to attack the dog, we brought within his reach four of them, which the police had found in the streets of Lyons. He seized each of them with fury by the back, by the legs, and by various parts of the body, and threw himself upon them as if he was determined to destroy them outright. One of these dogs was wounded in the lips. The other bites only caused bruises of greater or less size; for we know that the incisor teeth of the herbivorous animals flattened on their opposing surfaces, usually do little more than to bruise the parts with which they come in contact.

These dogs were then confined, and watched with care, and, with the exception of one that, when he was exposed to the ass was in a feeble state and who died on the twelfth day of a disease very different from rabies, they were on the fiftieth day apparently in perfect health. They were then destroyed by the knacker.

On the second day the ass appeared to be dreadfully agitated—he shifted his position every instant—he bit himself on the chest and the fore-arm—he gnashed his teeth with spasmodic force. At length the violence of the spasm ceased, and permanent trismus ensued. He was no longer able to draw the hay from the rack, nor did he attempt it, nor did he touch his water, except with the very tip of his lips.

On the third day his limbs could no longer support him. He made many useless efforts to raise himself, and to discharge his fæces. As in the preceding subject, the partial palsy was confined to the loss of motion alone, the sensibility remaining unimpaired. At 4 PM. he died, in violent convulsions.



He was opened immediately after death. There was a little redness on the mucous membrane of the larynx. The same tint appeared more vividly at the middle portion of the small intestines, and towards the point of the cæcum. The stomach, perfectly sound, contained some food, and the first intestines abounded with a yellow viscid mucus. The liver and spleen, and the thoracic viscera, were healthy. The brain and spinal cord were slightly injected with blood.

Inflammatory affections of the respiratory passages, laryngitis, laryngo-tracheitis, bronchitis, and pneumonia have been less frequent during the heat of summer than in the humid cold of spring and winter; doubtless because the skin, often covered with perspiration, is exposed to sudden chills; also the ordinary means of treatment have been successful oftener and more readily, from the readiness with which the cutaneous perspiration is established. Among the affections, there has been one which our predecessors used to call gangrenous angina, although both during life, and after death, none of the tissues presented the character of gangrene.

This horse, about ten years old, strong, and even a little ferocious, in a very good state of condition, and during the last five years having not exhibited the slightest illness, was brought from the place at which its owner lived, a distance of two leagues, in order to be shod. He was led back to his own stable before night, and there was not a single symptom of illness. In the morning it was perceived that he had considerable difficulty in grasping his food, and still more in swallowing it. At seven o'clock in the evening he was taken to the farrier, who, perceiving that it was a serious case, consulted our professor of pathology. The lower part of the cheek, and the upper part of the throat immediately beneath the jaw, were swelled and flabby, slightly cold, but without much tenderness. A loud laryngeal sound was heard, and which increased when the animal ate anything. The appetite was good, but there was difficulty in swallowing. The breathing, however, was not difficult, and the pulse was scarcely quicker or harder than in health.

The farrier had already abstracted four or five pounds of blood, and had prescribed a warm emollient drink. He had also scarified the swelling, making his incisions tolerably deep, and extending from the projecting part of the larynx to the symphysis of the jaw. There ran from the wounds a little blood, mingled with a clear yellow-coloured serosity. The hot iron was immediately applied to the whole of this surface. Diaphoretic drinks, mingled with honey, were prescribed; but it was impossible to administer them, on account of the violence of the patient and the danger of suffocating him. The posterior parts of his body were covered

with sinapisms, but which did not vesicate; and the Professor prognosticated that the animal would not live over the morrow. He died about nine o'clock in the morning.

He was opened at six o'clock in the evening. The stiffness of death still remained, but the enlargement of the throat had considerably subsided. The cellular tissue was infiltrated with a yellow serosity of the consistence of jelly and without any unpleasant smell. This infiltration was particularly abundant about the trachea, and extended on both sides of it from its commencement to its entrance into the chest.

After having disarticulated the jaw, and separated the base of the tongue from its adhesion to the right side, and also the veil of the palate, it was evident that the subjacent cellular tissue of these parts was yet the seat of considerable infiltration. The mucous membrane of the pharynx, the larynx, and the depths of the nasal cavities presented zones of a reddish-brown colour, and also some ecchymoses. The left ventricle of the larynx presented a mass of concrete serosity as large as a nut, and still adhering to the mucous membrane from which it seemed to have exuded. The sinuses of the head were likewise filled with a bloody serosity, or with discoloured blood. An arborescent redness spread over the internal tunic of the trachea. The subjacent cellular tissue was also injected with blood. The redness increased as it descended the tracheal tube, and disappeared towards the division of the bronchi, where was some spumous mucus lightly reddened. The lungs and the other thoracic viscera were sound. The stomach contained a small quantity of partially digested aliment. The mucous membrane of the right sac, throughout its whole extent, was of a vivid red. The colour gradually diminished, and at length almost disappeared in the small intestine. It had more intensity in the cæcum, in which intestine was a quantity of gravel and dirt. The spleen presented numerous violet-coloured prominences, which assumed this form from the blood contained in their parenchyma. It was of its natural size. The other viscera, as well as the brain, appeared to be healthy.

None of the causes of this disease have yet been satisfactorily determined. It is one in which the blood undergoes a manifest change, and which therefore, by analogy, ought to have some resemblance to those typhoid affections which are observed among the horses inhabiting the neighbourhood of some of the Brasse marshes.

There is a malady very destructive to the horse, and which, in despite of the positive knowledge that we have of its nature and its seat, is still named after one of its ordinary symptoms—we mean vertigo, which well deserves the profoundest study of the prac-

tioner. In process of time its vague and insignificant title will be abandoned, and it will be designated more in correspondence with its original seat and its peculiar nature. Hereafter it will no longer be permitted to say that it commences sometimes by a disturbance of the digestive powers, or over-fulness of the stomach, whether that disturbance arises in that viscus itself or in the intestines—sometimes from phlegmonous inflammation of the stomach alone, or combined with a similar affection of the first intestine, with or without disturbance of the functions of the liver—sometimes by direct inflammation, acute or chronic, of the meninges or of the brain, and with or without considerable congestion, and sometimes by an *ataxo-dynamique* essential fever, accompanied by irregularity and debility resulting from an impairment of the natural powers, arising from the excess of labour or the influence of cold.

This disease presents itself under different forms in our practice, but the diagnosis of it is often difficult. The indications are far from always presenting themselves in a direct and striking manner, and the theory of its treatment has, consequently, no secure basis. There may be organic lesions of the brain, presenting all the appearances of vertigo, and which it is impossible to recognise during life.

At the opening of a horse that had died of this malady, after lifting the parietal bones at their superior part near the occipital, there was seen, a little to the right, a very marked thinness of that bone. Between this point and the meninges was a mass of cellular tissue of the volume of a pullet's egg, thick and lamellous, and between the lamellæ of which was deposited a substance resembling that of steatoma, and in which, when it was touched, small osseous laminæ were recognised. Other osseous laminæ were found in the dura-mater and the serous membrane which it covers, as is also observed on the external surface of old serous cysts. The corresponding lobe of the brain was turned downwards, and depressed to the extent of about two centimetres. There was a certain degeneracy of structure in the left division of the cerebellum. About the diseased structure on the brain, already spoken of, the substance of that organ was considerably softened, the vessels were highly injected, and, on being cut into, a considerable quantity of blood escaped. The lateral ventricles contained a serous fluid, somewhat thickened. This horse was fifteen years old; he had been a good and honest worker, and had never exhibited any peculiar disease.

The cerebral congestion that destroyed him commenced with a spasmodic stiffness of the limbs, which was mistaken for founder. The appetite failed. Shortly afterwards there was a great dilatation of the pupil, and, finally, giddiness and vertigo ensued.

*The Turnsick* has been very prevalent this year among the sheep



in the neighbourhood of Lyons. The following is an account of three of them that were sent to us. One of them turned round and round, but sometimes to the right, and at other times to the left. There was no yielding spot on the cranium; nevertheless it was determined to apply the cautery in the way recommended by M. Legrand. It was done; but before night the poor animal could no longer keep himself on his legs—the respiration became laborious and stertorous, and he died early on the following morning. On opening the skull, we found an hydatid, as large as a pullet's egg, at the superior part of the brain, and in the mesian line.

A second sheep carried his head low; the visual axis was not deranged. He looked straight before him, and rarely turned, and when he did, he had no predilection for either side. Five or six days after his arrival, he appeared to recover his health spontaneously, and we were about to send him back to the flock to which he belonged; when, all at once, his appetite failed him, and he began to turn, and always to the right. On very carefully examining the exterior of the skull, we discovered a little flexible spot on the right side. We plunged a small trocar into this spot, and, on inclining the head of the sheep, a bloody serous fluid escaped. On the following morning our patient was not so much depressed, and he took some aliment. Three days afterwards, another flexible spot was discovered on the left side. We made an incision into the skin; and then, by means of a proper instrument, we raised the lamellæ of the two bony plates of the skull until we had arrived at the dura mater. Then, inclining the head, we observed a large hydatid quite intact. The sheep died on the following day. We now satisfactorily assured ourselves of the existence of the parasite, by cutting through the strangely-thinned wall of the left ventricle, in which the hydatid was contained.

The third sheep was so feeble that he was unable to stand or to turn. He died before we had an opportunity of examining him. An hydatid was found lodged under the envelopes of the brain, in the transversal scissure in front of the cerebellum.

Among the accidents of a somewhat unusual character that have occurred, was a *perforation of the trachea by the horn of a cow*. Very singularly, the kind of animal that was thus wounded is not mentioned. The wound occurred in front of the trachea, and about one-third of the way down the cervical portion of it. The horn of the cow had separated, almost without abrading the muscles of that region, the sterno-hyoidien, and the sterno-thyroidien (*sterno-thyro-hyoïdeus*), and made a round opening between two of the rings, into which the little finger might be introduced, and through which the air escaped with a whizzing noise. The borders of the wound, consisting of the integument and the muscles, were somewhat



swelled; but there was no separation between them, and therefore very little air had insinuated itself into the surrounding cellular tissue. The tip of the horn had slightly wounded the mucous membrane of the trachea immediately opposite to the wound.

It was first thought that the wound might be closed by means of the suture generally used in wounds of the abdomen, and thus cicatrization might be produced by the first intention; but it was soon perceived that the air at every expiration insinuated itself into the subcutaneous cellular texture, and infiltrated it, and produced a certain degree of emphysema. Some hours afterwards the two sides of the neck had acquired a considerable crepitating enlargement, and the respiration was much disturbed; the pulse was frequent, and the appetite ceased. We hastened to withdraw the suture, and to insert a tracheotomy tube, in order to facilitate the escape of the air. Some superficial incisions were made on the emphysematous parts of the neck, and reiterated pressure was made with both hands to force out the infiltrated air through them. The parts were also bathed with a warm stimulant lotion. On the following day the emphysema had almost entirely disappeared, or only a slight œdema remained around the wound. We then withdrew the tube—the suture was replaced, and a compress was applied and retained by means of a bandage, in order to prevent the passage of the air. Suppuration was soon established—the granulations became firm, and the cure was complete on the eighth day. This fact establishes the uncertainty attending a mere suture through the skin in wounds of the trachea, and the usefulness of external compression.

A strong diligence horse was brought to our infirmary on the 14th of last November, with a *contused wound on the left side of the croup*, at nearly an equal distance from the anterior and superior angles of the ileum. The extent of the wound was not more than about two centimetres—about two-thirds of an inch; but its depth, as ascertained by a sound, was forty centimetres, or about five inches. We removed the bandage from the wound, and ordered an emollient anodyne cataplasm to be applied. On the morrow the wound was enlarged, its borders were depressed, a sanious fluid was discharged from it, and it appeared to be far less painful. The pulse was frequent, but soft. The animal exhibited frequent depression and weakness, followed by violent spasms. The appetite was diminished—the abdomen was distended, and painful to the touch—and the bowels were constipated. We still more enlarged the wound, in order to ascertain its depth, and the sound was arrested by a bony surface. We could not, in any part of it, direct the sound towards the skin, in order to effect a counter-opening, and facilitate the escape of the suppurative matter. The wound was then dressed with wine diluted with water, and

covered with cataplasms slightly stimulant. We endeavoured to remove the constipation, tension, and tenderness of the belly by means of enemas, fomentations, and mucilaginous drinks. At night a cold swelling commenced around the wound, and extended to the quarters and the thighs. It was evident that gangrene had taken place, and the horse died in the night. We were afterwards told that, in going down a hill, the machine which is placed behind the wheels in order to retard the descent of the carriage having broken, the horse was thrown down, and violently struck on the croup by one of the pieces of iron belonging to the machine, and that this had caused the wound. On opening the carcass, we discovered that this piece of iron, after having perforated almost perpendicularly the skin and the muscles of the thigh, had struck the surface of the ileum about two inches from its anterior border, and had made a depression in its external table, more than two lines in depth, as if it had been struck by a musket ball. The peritoneum was reddened through a considerable extent, and the abdominal cavity contained twenty-three or twenty-four pounds of blood.

On the 16th of December, 1837, a strong draught-horse, six years old, was brought to us from the country, having *the whole of the muzzle and lower part of the head of a red-brown colour, swelled, and evidently very painful*. The tumefaction, most evident at the nostrils, had closed and deprived them of motion; and so great was the enlargement of the lips, that the mouth was half open, the tongue hanging out, of a red colour, and motionless. We were informed that this horse, labouring under coryza, was ordered to be submitted to hot emollient fomentations; but the animal, thinking that something to drink was offered to him, plunged the lower part of his head into the liquid at an almost boiling heat. The consequence appeared, at first, to be so serious, that they feared with regard to the life of the animal; and, in fact, the swelling of the nostrils produced extreme difficulty of breathing, while that of the lips and of the tongue prevented, during several days, its taking any aliment. We could not even make injections of farinaceous liquids into the mouth, for the least contact of the canula with the scalded surfaces caused extreme pain. We combatted this sad scalding by extensive scarifications on the alæ of the nose, and on the lips and the tongue, which produced a plentiful sanguineous discharge. Lotions of cold water, acidulated with vinegar, were employed as sedative refrigerants; and to these succeeded a decoction of sedative plants. On the fourth day we could insinuate into the mouth, by means of the space between the tushes and the grinders, some crumb of bread, or oat or other meal, mixed with water or soup. On the eighteenth day, the animal began to feed

of his own accord, and on the nineteenth day he was sent back to his master.

Three cases of *fracture of the jaw* have come under our care in the course of this year. The first occurred to an ass, four years old, that was attached, by the reins of a bridoon, behind a carriage drawn by two horses. This poor animal, falling as it was going down hill, was dragged for a little distance before its misfortune was discovered, and the bit of the bridoon fractured the anterior maxillary bones. When he was brought to us, the muzzle was turned up, and easily moveable; the superior dental arch was separated from the lower one about the space of an inch, and extended beyond it almost as much. A transverse wound existed in the superior interdental space, at a little distance from the two corner incisive teeth. The arch of the palate also presented a wound, an inch wide, through almost its whole length. When we moved the anterior fragment of the bone, we were assured that the fracture extended beyond the tushes in the direction of the anterior maxillaries, which, to all appearance, had been violently forced from their natural situation.

We replaced, as well as we could, the end of the jaw in its normal position, and retained it there by means of a leathern bandage. This bandage, which had the form of the bar of a bridle, had a large nose-band, which could be tightened or slackened by straps and buckles. An opening was left opposite to the interdental spaces, to permit the injection of liquid food into the mouth. To two metal rings, corresponding in height with the commissure of the lips, there was fitted, on either side, a twisted plate of iron wire, enveloped in a leathern sheath, which, in passing under the lip, surrounded the superior alveolar border, so as to fix it and gradually bring it behind and below the corresponding portion of the fractured jaw.

The wounds in the soft portion of the palate were cicatrized on the twentieth day, and on the twenty-fifth day a callus was formed sufficiently to enable us to permit the patient to eat some hay.

The second subject was a young ass, eight or nine months old. The fracture was of the right branch of the inferior maxillary bone, a little behind its union with the left branch. The fracture was caused by a kick from a horse. The tumefaction of the soft parts was very great, and the first molar tooth was so much loosened as to render it necessary to extract it. We retained the fractured portions in their natural position, without displacing the anterior one, by means of a simple linen bandage in the form of a nose band, which served, at the same time, for the application of a defensive cataplasm, which the contused state of the external soft parts rendered necessary. The patient was nourished, during the

first days, with gruel; and he could begin on the eighth day to eat a little soup, and bread, and roots reduced to a pulp, the bandage being loosened for this purpose. On the following day his master withdrew him from our hospital. We afterwards heard that he was able to eat hay on the twenty-fourth day.

A female goat was our third patient. She had a transversal and clean fracture of the two branches of the lower jaw, about an inch behind the symphysis. The mouth was somewhat open, and the incisor teeth of the two jaws separated a full inch from each other. The extremity of the fractured bone was moveable. There was neither wound nor tumefaction of the soft parts. The accident had happened six days before she was brought to us, and during that time she had very much fallen away, on account of her being deprived of food, and also on account of a diarrhœa under which she had laboured some days before.

As with the ass, we employed the nose-band, and the linen bandage, in order to keep the fractured parts in apposition with each other. The woman to whom she belonged, took her away on the sixth day, and afterwards informed us that the cure was complete before the twentieth day.

The *protrusion and inversion of the rectum* is an accident which presents itself occasionally in our practice, and the treatment of which does not appear to be established on any scientific basis. It is particularly frequent in young dogs labouring under "Dis-temper," especially when the gastro-intestinal membrane is the part principally affected, under the form of diarrhœa or dysentery. This accident is not a primary or essential disease; but it is the result of, and complicated with another malady: nevertheless it demands a peculiar and appropriate treatment.

Some veterinarians seem to consider it as a primitive disease, and, too inattentive to the morbid condition of other parts, or of the animal generally, by which it was preceded, or which it accompanies, advise to amputate the rectum, towards its anal termination; and they adduce the difficulty of returning the intestine, and retaining it in its natural situation, as a proof of the necessity of this operation.

But this mode of treating protrusion and inversion of the rectum appears to us to be far too generally had recourse to, and with too little regard to that which preceded or had followed the escape of this intestine, and the actual state of the intestine itself. As often as a protrusion of the rectum may be coincident with a state of acute gastro-intestinal inflammation, or of intestinal inflammation alone, and accompanied by dysentery or diarrhœa, we should endeavour to combat the inflammation itself, and the operation is contra-indicated. When it shall have resisted every emollient, anodyne,



refrigerant, astringent, or tonic-local measure, and we have again and again vainly attempted to reduce it, and to retain it in its natural situation by means of the pessary or the bandage, then one of the three following cases may present itself—either there is a simple invagination, and to no very great extent, of the inferior part of the rectum—or the invagination is double or treble—and, finally, when either the first or the second of these states exist, there are other invaginations in the course of the intestine.

In the second case, the intestine is hard, distended, and the hernial mass is voluminous—in the third, the patient refuses his food, vomits, is griped, or from time to time there is considerable tympanitis.

In the second case, also, the division of the hernial protrusion of the rectum, however small it may be, may produce a solution of continuity in that part which belongs to the abdominal cavity anterior to the pelvis, and thus permit blood and faecal matter to escape into the peritoneal sac, and inflame it, and destroy the animal.

In the third case, as death is the inevitable consequence of invaginations, which certain symptoms prove to exist in portions of the intestines to which we cannot obtain access, the operation only hastens the fatal termination of the case, and, perhaps, causes it to be attributed to the imprudence or unskilfulness of the operator.

In our opinion, therefore, a division of the hernial portion of the rectum ought not to be attempted, merely because we are unable to reduce the intestine, or to retain it when reduced, but only in the first case of the three which we have mentioned, namely, when we have nearly a certainty that *the invagination is a simple one*, and also nearly a certainty that the solution of continuity in the rectum will not pass beyond the pelvis. Being assured of these circumstances, *the removal of certain superficial portions of the thickened mucous membrane*, by means of a flat and curved pair of scissors, is far preferable to the entire division of the intestine.

The *vagina* in the bitch is subject also to displacement, complete descent, and which remain long after the action of the cause which produced them, and which, most frequently, is parturition. This kind of hernia sometimes exceeds the size of a large pullet's egg. The reduction of it in every case is not easy, but the retention of it offers still greater difficulties, whatever kind of pessary or bandage is employed. Tired of ineffectual attempts to reduce a protrusion so unpleasant and disgusting, we have twice in the course of last year attempted the separation of the hernial portion of the *vagina*; in the first case by a circular ligature, and in the second by distinct sutures, each including a third of the base of the vaginal pouch.

The bitch that was subjected to the former mode of operation suffered much, and for a long time : indeed, we feared that we should lose her. The second suffered comparatively little. At present, we certainly give the preference to the latter mode of procedure.

A stranger presented himself at our school in the month of May, in the last year, and requested us to try upon a dog a styptic—*un moyen hémostatique*—of his own invention. It was a liquid, limpid, colourless, and without appreciable smell or taste. We were induced to comply with his desire by the hope of benefitting our science by some valuable discovery. We experimented on the carotid before its division, and, it being denuded and isolated from the pneumo-gastric nerve, it was opened by dividing it. The experimenter immediately applied on the two orifices little pledgets of tow, thoroughly wetted with this liquid. They were retained in their situation for one or two minutes, and then the blood ceased to flow. It cannot be denied that this liquid possesses a most valuable property; but we know that alcohol, cold saline solutions, styptics, and absorbents, such as lycoperdon, agaric, &c. seconded by compression, are sufficient, in a great number of cases, to arrest arterial hæmorrhages in these animals.

In order to judge of the comparative effect of these substances, employed in similar circumstances, we procured some alcohol at 36 degrees of strength, and, having saturated some pledgets with it, we applied them to the ends of the divided carotid, and, as in the last experiment, we kept them on the edges of the vessel during the same space of time. This dog lost very little blood; the wound rapidly healed; and the animal was perfectly well fifteen days afterwards.

A third dog was submitted to the same experiment, but the lycoperdon was employed. He lost a large quantity of blood, on account of the difficulty that was found in placing the styptic immediately over the wounded vessel, and retaining it there. Nevertheless the hæmorrhage was arrested. The dog lived two days, and then died, seemingly from the debility which necessarily followed the loss of so great a quantity of blood.

In determining, then, the value of the liquid prepared by our experimenter in arresting hæmorrhage of the dog, we must say that alcohol possesses the same property, and to the same degree; lycoperdon possesses analogous properties, but not to so great a degree; while other tonics of a similar kind, and even saline and refrigerant solutions, especially if their power is aided by compression, are styptics almost as sure as his. It is well known that the plastic power of the blood is greater, and the progress of cicatrization more active, in animals than in man; therefore, although it

may be true that this fluid possesses a very great and almost exclusive property of arresting hæmorrhage in the domesticated animals, will it follow that it will have the same effect on hæmorrhage in the human being? We must be permitted to entertain some doubt about this.

*Recueil, Oct. 1838.*

## A CASE OF ANEURISM IN THE BENDING OF THE ARM IN A COW.

*By Mr. C. SNEWING, of Rugby.*

EARLY in the morning of the 3d of October last, I was sent for to visit a milking cow, the property of Mr. E. Driver, of Clarendon House, on the arm of which a considerable tumour had made its appearance in the course of the preceding night. It was on the outside of the elbow-joint, extending across from the olecranon towards the dewlap, not possessing the characters of phlegmon, but soft, and yielding to pressure, and seemingly accompanied by very little pain. To a non-veterinary observer it bore the aspect of having arisen from the bite of a venomous reptile; but the almost total absence of pain, and the slight augmentation in heat, led me to reflect differently regarding its nature.

As it was the first case of the kind which I had seen, I may, perhaps, be pardoned if I state the train of thought which passed in my mind, especially as it may enable others to reason more accurately than I was disposed to do. "It is evidently fluctuating. Can it be an effusion of serum? I know not from what source that could be derived. Is it a deep-seated abscess, obeying the laws of nature, and forcing its way externally? Its situation renders that improbable. It is hard to decide on its nature." I confess that the idea of its being an aneurism did not then present itself to my mind. "At all events, I will give an aperient, use a sedative lotion, and await the result."

No alteration appearing to take place during ten days, excepting the sensation of fluctuation becoming more perceptible towards the centre of it, and the interstitial substance between it and the skin being removed by ulceration, I ventured to thrust my lancet into it, in order to ascertain its real nature, when, to my great surprise, a rush of blood followed the withdrawal of the instrument, but it almost immediately ceased.

Now, for the first time, some alarming suspicions of its being an aneurism occurred. At all hazards I determined to be convinced of the real nature of the case. I introduced my finger into the orifice

which I had made. I immediately detected a soft, yielding substance, which I could readily break down with my finger, and succeeded in bringing out a piece of pure coagulated blood. This was followed by another gush of blood, which threatened to continue to flow. I passed a suture through the lips of the orifice, and ordered the cow to be kept in. I also inserted a seton in front of the enlargement.

The incision which I had made readily healed, and although the tumour did not diminish in size, I hoped that in time it might do so, for no pulsation could be felt in it, or had been in any of its stages. I recollected, also, the opinion of Sir Astley Cooper, that "the force of the pulsation is in the inverse proportion of the size of the aneurism," and this, if it was an aneurism, was a very large one. Considering it to be a spurious or false aneurism, I inferred that already some of the blood in the cyst—that most distant from the current—had become coagulated, and I trusted that the deposition of coagula would go on until the cyst had become filled—then, the blood no longer circulating through the cyst, either the vessel which supplied it would become obliterated, or a false membrane being thrown across its ruptured parietes, nature would next proceed to remove the deposit by absorption, or cast it off from the system by suppuration and ulceration. After the lapse of a few days, slight hæmorrhage from the part came on, which continued at intervals for seven or eight days, when it ceased. The tumour was now lessened in size; but after this it continued for a week or more in an apparently indolent state. I therefore ordered a stimulant to be rubbed in daily, consisting of the liniment of cantharides and oil of turpentine, which appeared to increase the action of the absorbents, for, after the lapse of a fortnight, very little of the original enlargement remained, and that continued stationary.

Your opinion on this case, in the pages of your inestimable Journal, *THE VETERINARIAN*, would be thankfully perused, and particularly as to the vessel which was actually involved.

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[I perfectly understand the meaning of my friend, Mr. Snewing, that, while the anatomy of the ox has not, until Mr. Spooner nobly commenced the task, been taught at the English Veterinary College, the author of the work on "Cattle" has very superficially treated this subject, and has been quite silent as to the arterial circulation in the upper portions of the extremities of cattle. He pleads guilty to the charge. It was the natural consequence of the brief and superficial description of the greater portion of the anatomical structure of these animals, to which the limits and the plan of that work confined him.



I am not aware of any material difference in the distribution of the arteries about the elbow-joint in the horse and the ox; and from Mr. Snewing's account of it as "on the outside of the elbow-joint, and extending across from the olecranon towards the dewlap," it seems to have been a branch of the ulnar artery, and that which, after its bifurcation on the inner surface of the bending of the elbow, takes its course towards the olecranon.—Y.]

## THE VETERINARIAN, FEBRUARY 1, 1839.

*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

OUR readers will see with pleasure, on the cover of this Journal, an announcement of the intention of the students of the Edinburgh Veterinary College, to present a Piece of Plate to Professor Dick, as a testimony of their respect and gratitude. No man better deserves such an honour. To his unassisted and unwearied labours the Scottish school was indebted for its origin. At first he stood alone, or opposed by those who ought to have better appreciated the noble object which he had in view: but a few years only passed when the talent and the worth of William Dick began to be acknowledged, and the Highland Society had sufficient good sense and liberal feeling warmly to patronize his undertaking. They saw, and Scotland has since felt, the value of the connexion between agricultural and veterinary science. They made him a part and portion of themselves; and the consequence has been, that, while through the various districts of Scotland agricultural societies have sprung up, to each an educated veterinary surgeon has been attached, and the union has been honourable and advantageous to both.

The Clyde Street school having become thus firmly based, and extensively useful, its Professor and the Highland Society thought that they had a right to share in the privileges possessed by the Royal Veterinary School of St. Pancras, with regard to the cavalry service. This was demanded at the proper quarter, and immediately granted.

Nought now remains but an honest and friendly rivalry between the two schools; each instructing its pupils *in every branch of*

*veterinary science*; each a worthy associate of the Agricultural Society with which its locality has allied it, and each identified with the best interests of their common country. There is room for both. There is sufficient extent of surface and extent of subject; and ill will fare that school which flagrantly neglects its duty, or calumniates its rival.

A pupil of Professor Dick has favoured us with a sketch of the concluding portion of his last introductory lecture. It breathes a spirit of liberality which we expected from such a man. He had been warning his pupils of the value of the little time which they had to prepare for the important duties of their profession. He had urged them to attend to their anatomical studies—to pay the closest attention to the cases the treatment of which they witnessed in the infirmary of the college, or in their periodical visits to out-door patients with him, or in journies at his direction into the neighbouring country. He advised them to keep a regular diary of all that they saw and thought; of their own errors, and, perhaps, of his, and of their and his success.

“They must have a library of reference. It needed not to be a large one; but every practitioner who would do himself justice, should have in his possession the sterling works on veterinary science. Among those that were indispensable he would name Percivall’s “Anatomy;” and, the “Lectures” being out of print, his “Hippo-pathology.” The first would prevent him from forgetting the very foundation of his profession, while the other, in the most simple yet scientific way, taught the general principles of pathology. By the side of these should stand a work that would never be superseded, Blaine’s “Veterinary Outlines,” and also Blaine’s “Treatise on Dogs:” next to them would be “The Horse,” “Cattle,” and “Sheep,” from the pen of Mr. Youatt; the “Manual of Pharmacy,” by Mr. Morton; Reid’s “Text Book;” and Grant’s or Blumenbach’s “Comparative Anatomy”—both of them, at the same time, clear and profound. To these, as connected with the daily increasing progress of veterinary science, should be added the monthly “VETERINARIAN.”

“Some of his pupils, he believed, were acquainted with the continental languages. He would earnestly advise them to procure

the foreign veterinary works and periodicals. This extensive acquaintance with the characters of disease as modified by soil, and climate, and food; and the various results of different systems of treatment, would give them more enlarged and correct notions of the practice of their profession; and would distinguish them from the groom, the cowleech, and the uneducated pretender—a class of men who have had their day, and should give place to those who are better able to uphold the character of the profession, and to work out all the noble purposes which our art is capable of effecting. By thus conducting their studies, they would become creditable and useful practitioners in their native country, or in any part of the world in which their future destiny might be cast.”

The Editor would be happy to be the medium of forwarding from any of Professor Dick's pupils now settled in the south, or from any of his well-wishers, contributions towards this contemplated honorary presentation.

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In the next number the Editor will probably be enabled to give some account—may it be a satisfactory and honourable one!—of the negotiation between the English Agricultural Society and the Governors of the English Veterinary College.

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A practice has been somewhat increasing, of soliciting the opinion of the Editor, in the pages of *THE VETERINARIAN*, on cases that have occurred in private practice. So far as he can be useful, or any hint of so humble an individual as himself can be of service, he will be ever at the command of his friends: but it should be recollected that this was not the original purpose of *THE VETERINARIAN*, nor should it be the frequent practice of him who conducts it.

The object of this periodical is the recording of new, or rare, or valuable facts—the illustration of the grand principles of our profession, and that, occasionally, by free yet friendly discussion—and, most of all, the encouraging of each other in maintaining the honour of our profession, and contributing to and still more accelerating the rapid progress which it has recently made.

Nevertheless in the way of private communication, or otherwise if there should be occasion, and that being left to his own

discretion, he will always be ready. The two following cases will illustrate his meaning, in each of which his opinion has been solicited.

The first is from a young friend. It is of somewhat unfrequent occurrence, and is manageable enough when early and decidedly treated.

A horse, seven years old, that had led an idle kind of life from the time that he came from the breaker's hands, was put to coach work, and continued at it about four months. He was then suddenly taken ill. He hung his head, and appeared very dull—refused every thing in the shape of food—his extremities were alternately hot and cold, and the Schneiderian membrane was very highly injected. The pulse was 42—the respiration tranquil, and there was no appearance of acute pain. Small doses of aloes, nitre, and calomel were at first administered; but without apparent relief. A seton was inserted between the jaws, for there began to be some swelling about the mouth and face, although not clearly including the parotids. A seton was also inserted on each side of the poll, but neither of them acted.

He continued in this unsatisfactory state six or seven days. Calomel and opium had now been given. A discharge of dirty coloured pus had ensued from the mouth—the breath became dreadfully foetid—the pulse rapidly increased in frequency—it rose to 64, and on the twelfth day from the commencement of the attack, the patient died.

The small intestines presented a healthy appearance, but the mucous surface of the cæcum and colon was inflamed, as was also the whole of the villous portion of the stomach. The liver was paler than usual, but firm in texture. The pleura was perfectly healthy, but the lungs were highly congested. The larynx was very much inflamed, but the inflammation did not extend down the trachea. The fauces were filled with a serous fluid. On each side of the upper part of the tongue were two black ulcers, and small ones here and there on the gums. A veterinary friend thought that there was rather more fluid than there should have been in the lateral ventricles of the brain.

This case presents little or no difficulty, as to the general principles on which its treatment should be conducted. A horse, un-



prepared for the continuance of the task, was put to much harder work than he had been accustomed to. A state of febrile disturbance ensues, either in consequence of this, or aggravated by it. It is accompanied, at first, by little or no local inflammation. It, possibly, was not attacked with sufficient energy at first; but, however that may be, local determination soon ensues, either taking the usual course of complicated fever, or, as it would seem here, first involving those parts in which a predisposition to inflammation had been produced.

The membrane of the mouth, unused to the long and violent pressure of the bit, is first affected. Glossitis appears; there are vesications along, or under, or on the tongue. The larynx speedily sympathizes, and the lungs had been far more hardly worked than they had been accustomed to, next, or simultaneously suffer; or there had been latent inflammation set up in them before, and which only required this attack on other organs to be developed. The mucous membrane of the intestines shares in the inflammation. The colon and the cæcum, the viscera in the horse first or chiefly affected, become ulcerated. *Gastro-enteritis*, combined with fever of a typhoid character is set up, and death ensues.

What should have been done? Venesection should have been had recourse to, with the finger on the pulse, and the blood suffered to flow until a constitutional impression had been made. A mild aperient was administered. Perhaps not more than one was required. The character of the medicine, however, whether aperient or sedative, or, by and by, tonic, must be regulated by the changing character of the disease. Attention to the local disease is imperative. The vesicated portions of the tongue—vesication will precede the ulceration by two or three days, or more—should be deeply lanced, and antiseptics—a solution of the chloride of lime, the best—should be freely applied to the mouth. Setons or blisters should be applied to the throat, attention being at the same time paid to every indication of local disease. The diet should be mash, gruel, and every thing simple and unirritating. No excitant—no cordial can be admitted in the early stage of the disease; but the cautious use of them will often be indicated at no very distant period.

The second case is from one of “the old school.” Were it not

for the dreadful sufferings which the miserable patient underwent, we should smile at our friend's strange and egregious blunders. There is scarcely a pupil who will not understand the case in a moment; but it puzzled the old practitioner for many a week.

"I have sent you a case," says my correspondent, "which, if you should think it worth a place in your Journal, is at your disposal. The patient was a young brown mare, half-bred, the property of my father. On arriving on the 18th of January, I found that the groom, on his first going into the stable on the 8th of the same month, found her unable to move her near hind leg. To use his own expression, 'It was as stiff as a gate-post.' My father went immediately into the stable and examined her. The pulse was 35. There was every appearance of health, with the exception of a little constipation of the bowels. He examined the limb minutely. There was no swelling, no tenderness, no wound, no bruise. The limb had the sensation of feeling as perfect as either of the other extremities. She could stand on it when put under her, as well as on the other, and appeared to suffer little or no pain; but she was unable to move it in any way.

"Bleeding and purging were had recourse to, and, afterwards, diuretic and sedative medicines were employed, and the limb was embrocated with stimulating oils.

"I found the pulse 36; the *fæces* soluble, and the appetite good. A rowel had been inserted, two days before, on the inside of the tibia. There was now tenderness to the touch, and a little swelling round the stifle. As influenza was among the other horses in the stable, and her coat looked pen-feathery, I had her clothed from head to foot, and gave her a decoction of rue and wormwood, to cause perspiration. I also ordered two drachms of powdered gentian and an ounce of spirit of nitrous ether to be given daily; and directed a fomentation of poppy heads and an embrocation of the camphorated liniment to be applied to the stiff limb.

"My patient was fourteen miles from my residence: I therefore did not see her again until the 25th. She was no better. The pulse 38. The leg, in consequence of the rowel, was swelled down to the very foot, and was become painful to the touch. The rowel discharged well. Another physic ball was given, and the fomentations and embrocation were ordered to be continued.

“While the groom was giving her a decoction of linseed on the 23d, she fell down; and, after she was got up, she walked out of the stable to all appearance sound; but before she had gone fifty yards she dragged her leg behind her as before. *The spasm had appeared to cease for a short time, if it was a case of that sort.*

*Feb. 2d.*—No better. A drachm of powdered opium to be given every evening, and the sacral vertebræ and the whole limb to be blistered.

*10th.*—Pulse 42. Sinking in condition—appetite not so good. The blister rose well, but the limb is as rigid as ever. After giving her a few doses of the opium, my father now said he would work his own way, for she became very uneasy and full of pain, and he said that a few more doses would have killed her.

I did not see her again until the 25th. The pulse was then 55. All the muscles of the limb appear to be wasting, but the limb was as stiff as ever. Bleeding, purging, and stimulants, had been used since my last visit. Mr. ———, *a surgeon of that place*, had kindly consented to look at the mare, and at his suggestion she was taking nitre, camphor, and emetic tartar; and another blister had been applied.

*March 3d.*—Pulse 44. A mere skeleton, and the appetite nearly gone.

*10th.*—Pulse 41. The other symptoms the same. I ordered a drachm of opium to be given daily.

*14th.*—Pulse 50. Respiration greatly increased, which had hitherto been tolerably tranquil—partial sweats are breaking out, and she is continually looking round at her flank. The limb as stiff as before. The swelling had remained stationary ever since the rowelling, and was now exceedingly painful to the touch. I ordered the opium to be discontinued. I begged that she might not be destroyed, for I was anxious to see what would be the termination of the case.

“She remained until the 25th, when we determined to move her from the stall in which she had been all this time standing. A rope was fixed round the pastern of the stiff leg, and an assistant had hold of it, to pull the leg forward every step she took. In this way she was dragged along, as it were, for the space of five or

six minutes, when an accidental circumstance caused her to fall suddenly and with some violence, and she evinced a great deal of pain; but, to our astonishment, we found on raising her, that, although very lame, she had to a material degree recovered the use of her leg. In ten days the lameness had nearly or quite disappeared. I have ridden her since, and was never better carried.

"I have sent you this case, in order to elicit your opinion, or that of some of your correspondents, on this singular subject."

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[It was as plain as plain could be, "*a dislocation of the patella*;" and fortunate ought our correspondent to think himself, that, after all his blunders, he got so well out of the scrape as he did. Let him turn to any of the numbers of THE VETERINARIAN which treat of this lameness, and he will find that, in future, he may cure it, at almost any time, in five minutes.—Y.]

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After the whole of our present number was not only in the hands of the printer, but *in type*, comes a letter from "a Highland Farmer," dated "Oban, January 12th, 1839," with a request that it shall be immediately inserted. We must, indeed, entreat our correspondents to be more punctual. There is not a month in which some foolish neglect of this kind does not occur.

This gentleman asks whether "Students who have obtained diplomas at the Scottish Veterinary College, are eligible for the appointment of veterinary surgeons in her Majesty's army and in the army of the Honourable East India Company's Service? When such an arrangement took place, and on what authority he is to depend for the truth of it; to what public record or office he can refer for information; and whether any other examination is to be undergone?"

We have understood that the students of both schools will stand on an equal footing, and that the only difference will be priority on the list. Professor Dick, will, probably, set this matter right.

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## REVIEW.

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Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

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*A Treatise on Pathological Anatomy.* By G. ANDRAL, *Professor to the Faculty of Medicine of Paris.* Translated from the French, by Drs. R. TOWNSEND and W. WEST. 2 vols. 1829 and 1831.

WE have often been ashamed of ourselves that a work which is an honour to the French school, which finds its proper place in the library of every scientific inquirer, and which is devoted, and satisfactorily so, to one of the most important subjects that can occupy the attention of the medical or veterinary inquirer, has not been reviewed by us. Perhaps the very importance of the subject, and the difficulty of giving a simple and satisfactory account of such a work, has had considerable influence on our minds. General morbid anatomy!—what a wide and noble and fearful field! Were we, however, induced by no other motive to attempt our too long neglected task, gratitude to this gentleman for the high, we will not say undeserved, consideration with which he regards our especial division of medical science, should spur on to the discharge of our duty. He has condescended to mingle intimately with many of the professors of the veterinary art—he speaks kindly of them—he acknowledges his obligations to them—and last, and not least, he never disgraces them by the adoption of many a false and fanciful theory, now discarded by the great bulk of our profession.

M. Andral is convinced of the importance of the establishment of a few plain but important principles. The simplicity with which he states them is beautiful. “In every part of organized living matter there are three grand fundamental actions uninterruptedly going forward—capillary circulation, nutrition, and secretion. These phenomena, although presenting an almost infinite variety of simplicity or complication, are, nevertheless, constant and uniform in their ultimate results.

“I. *Capillary circulation.* A fluid under the different denominations of *blood*, or *lymph*, or *sap*, deposits in the various tissues, and subsequently retakes from them, the materials of which all the solids and fluids are composed. In the intimate structure of every tissue there exist a series of currents directed in their movements by forces independent of those which serve to propel the blood through the arterial system. In this intimate structure the fluids and solids come into contact, and become blended together and amalgamated, and the blood or some analogous fluid is abstracted

from the circulation, and becomes organized and endowed with vitality. Such is the capillary circulation, as widely diffused throughout the kingdom of nature as life itself. It is found in full force, after heart, arteries, and veins, have disappeared; and it is acting in fœtal life long before the development of any of these vessels.

“ II. *Nutrition*. This process consists in the several solids alternately receiving from and returning to the nutritive fluid a succession of particles similar to those of which their structure is already composed. The blood which circulates through the system of capillary vessels, has, when viewed with a microscope, been compared to a sort of whirlpool, from which various particles are constantly thrown off to the different solids, while others are detached from the solids, and flung back into the vortex of the circulation.

“ III. *Secretion*. In the intimate structure of every tissue, or whenever a particle of the nutritive fluid comes in contact with a particle of living matter, there is a fluid produced, often without the aid of any peculiar secretory apparatus, and otherwise by a distinct glandular one.

“ These three phenomena comprehend the fundamental principles of organization in all beings; but in man and in animals a fourth action is superadded, which exercises a powerful influence and control over the nervous system, is the seat and instrument of this action, and its influence over the acts of circulation, nutrition, and secretion, is the more absolute and indispensable, the more elevated the rank the animal occupies in the scale of existence.

“ Finally, since all the materials of nutrition and secretion are derived directly from the blood, and since the blood contained in the capillary vessels differs in no respect from the general circulating mass, it follows that the qualities of the general mass of blood must exercise a very material influence over all the phenomena of nutrition and secretion. Hence it is that, in beings that have centres of nervous influence and a systemic circulation, the life of each part is involved in the life of the whole, and there arises that relation of so many different actions to the whole and to each other which constitutes the unity of the living system. The animal in a state of disease exhibits certain modifications of those actions that are essential to health. The supply of blood may be different in quality, and hence will arise *lesions of the circulation*. The component particles of the different solids may be altered in their arrangement, order, number, consistence, or nature; hence *lesions of nutrition*. The different fluids separated from the blood may be altered in quantity or quality; hence *lesions of secretion*. The state of the nervous system, and the composition of the blood,

exert a powerful influence over capillary circulation, nutrition, and secretion; hence the various *lesions of innervation and sanguification.*"

These five sections contain the various morbid alterations to which the frame is liable. They are adopted as the five grand divisions of his subject, and he gives a generally clear account of the cause and extent of these lesions, whether belonging to one system only, or complicated with others. Few things are more important than an established and well-founded connexion in the mind of the practitioner between the existence of certain diseases and modifications of disease during life, and corresponding lesions of a certain system or systems observable after death. A general and definite idea of the lesions must be formed in order to render the case satisfactory to the surgeon and the owner of the patient; but there are few things more interesting or, at first, more difficult than to read and to understand the uniformity of the general lesion, and the variation of others, depending on the constitution of the patient, or the circumstances in which he was placed; and the treatment which he received, modifying the original lesion, or connecting it with the lesions of other systems.

We quote, not the most striking of our author's elucidations, but one of those in which he avails himself of the aid of our art. "We frequently find," says he, when speaking of the lesions of circulation, and, particularly, the diseases of the arteries, "in the dead body, the internal membrane of the arteries dyed a bright red colour. Whence comes this peculiar appearance? Is it the result of inflammation, or is it merely a post-mortem alteration? Whenever a body is opened in an incipient state of putrefaction, the internal coat of the arteries is invariably red; and, in proportion as the quantity of blood is considerable, and it evinces but little disposition to coagulate, this redness is more marked, and makes its appearance at a shorter period after death. These facts are sufficient to prove that the uniform redness which is so often observed in the inner arterial coat may be produced by the simple circumstance of the blood soaking through and imparting its colour to it. Yet is it always a *post-mortem* alteration, or is it not in some cases produced during life?

"In the year 1825 a violent distemper prevailed among the horses at Paris, and in some of the provinces. The most general symptoms were those of gastro-intestinal irritation; but, with very few exceptions, the thoracic viscera were likewise implicated, the breathing being greatly affected, although there was not much cough. During this epidemic, M. Dupuy and I dissected many horses at the slaughter-houses at Montfauçon. The animals were scarcely slaughtered when we proceeded to examine them, and, in



many cases, the internal membrane of the heart and aorta presented a bright red colour.

“At the same time M. Bouley, jun., one of our most distinguished veterinarians, examined more than fifty horses that died of the same epidemic. His dissections were always made within from half an hour to three hours after the death of the animal, and, in almost every instance, he found the internal membrane of the heart and aorta of a bright scarlet or purple colour. On the other hand, MM. Rigot and Trousseau, who likewise opened a great number of horses, state that they never found any appearance of redness in the heart or arteries when the dissection was made shortly after death, but that they always found it when the dissection was deferred for several hours.

“This difference in the result of our dissections is to be accounted for by the circumstance of our researches having been made at different periods; mine during the year 1825, and theirs in 1828, when the first inflammatory disease had ceased. There is, therefore, nothing extraordinary in the different results that we obtained; and it appears to me that the very circumstance of the redness of the heart and arteries so constantly observed during the first epidemic, and not being observed after it had ceased, affords an additional reason for supposing that it was produced by a morbid condition of the part. As to the nature of that morbid condition, I think it highly probable that it was inflammation of the coats of the arteries. These horses during their illness presented decided symptoms of disease in the thoracic viscera; and as no morbid appearance was found in the lungs, we have nothing to attribute these symptoms to but the affection of the heart and large vessels, characterized—1st, By the uniform red colour of their internal membrane; 2d, By a remarkable degree of softening in the muscular structure of the heart; and, 3dly, By inflammation of the pericardium, and effusions of different kinds into its cavity.

“From these facts I conclude that the uniform redness of the internal coats of arteries may, in some cases, be the result of inflammation. In one of the cases recorded by M. Bouillard, the internal membrane in those parts in which it was red, was covered by a thin layer of albuminous matter. This surely is tolerable evidence of the existence of inflammation.”

We take another illustration, almost at hap-hazard:—**MELANOSIS**, either existing in a mass of an irregular figure, or divided into lobules—or losing its consistence, and being transformed, at first partly and then wholly, into blackish pulp—or deposited in the form of solid layers on the surface of membranes, or rather false membranes, stained black, and infiltrated with melanosis—or in a fluid state, as in the stomach, or some serous character of the



abdomen. MM. Trousseau and Leblanc found, on a horse's kidney, a fibrous cyst of the bulk of a fist, which contained about eight ounces of a black fluid. It is formed of the different elements of the blood, and particularly of the colouring matter of that fluid; and there is scarcely a tissue in which it has not been found in one or another of the forms just described. It has been found in the subcutaneous cellular tissue, in the submucous tissue, and on the internal surface of the intestines. It has been deposited between the muscular and peritoneal coats of the intestine—between the pleuro-pulmonalis and the substance of the lung—between the pericardium and the heart; but most generally in the cellular tissue interposed between the muscles, or between the fasciculi of the same muscle. M. Andral saw, in a horse affected with hydrocele, the portion of serous membrane that covered the tunica albuginea of one of the testicles presenting a round spot as black as ebony, about the size of a five-franc piece; and not far from this large spot were three or four smaller ones of a less regular form, and rather slate-coloured than black.

Melanosis has been seen in the different tissues composing the parietes of the arteries. It has not yet been found in the parietes of the veins. The osseous tissue has been little affected by it, but it has not often been seen in either the fibrous or cartilaginous tissues. In the muscles it has rarely been found to involve the muscular fibres themselves, but only the cellular tissue uniting them; he, however, quotes a case from Trousseau and Leblanc, in which the proper tissue of the muscles had been infiltrated. A white horse had a melanic tumour on the perineum. Some of the muscular masses at the posterior part of the thigh were found to be much paler than in the natural state. Inferiorly they became insensibly confounded with the rest of the muscles proceeding from the ischium to the tibia. On the contrary, advancing upwards, they grew paler and paler—the cellular tissues uniting their fibres became of a greyish colour, and, at last, the muscular fibres themselves, which had become harder and more coherent, and grating under the knife, assumed a tinge of the deepest black, and in this state proceeded to their attachment at the ischium, still, however, preserving their fibrous appearance. Their tissue was dry, and exceedingly difficult to break down: the tendons and aponeuroses had alone escaped the melanic infiltration, and the ischium itself was tinged black to a great depth, and was remarkably friable.

Of the muscles of organic life, the heart is the only one that has been found in a state of melanosis, and there is only one case of this on record. It is often found in the lungs, but never in

the brain, although the latter in its healthy state presents in certain parts a black colour which might be denominated *natural melanosis*. The lymphatic ganglions are frequently attacked by melanosis, and then often grow to an enormous size. It may exist alone in an organ, or be combined with other accidental productions. It is often the associate of scirrhus and sometimes of tubercle.

It may attack a greater or less number of organs at the same time. It has existed simultaneously in the subcutaneous and intermuscular cellular tissue, in the peritoneum, the pericardium, and the pleura, in the ovaries and the sternum, and in the bones of the cranium. It is observed at all ages. It occupied the whole of the superior lobe of the left lung in a girl only nine years old, and it is of too frequent occurrence in old men labouring under chronic pneumonia.

It is not an affection peculiar to man. It has been most frequently observed in the horse, not, perhaps, because it is most frequent in him, but because he is the oftenest examined. The lymphatic ganglions are the parts that seem to be most subject to this affection. The submaxillary ones are often greatly indurated, increased in size, and of a black colour. M. Gohier, formerly veterinary professor at Lyons, found in the horse melanic masses in the parietes of the heart, in the lungs, the spleen, and even the spinal cord. Professor Rodet has found an induration of more than one-half of one of the parotid glands. In another he found a remarkable kind of melanosis in one of the eyes: the space usually occupied by the vitreous humour was filled with a fluid as black as Indian ink, in which floated equally black clots. The crystalline lens was of a deep yellow colour, and in some parts even brown.

It is particularly in white or dapple-grey horses that this accidental production has been observed, as if the colouring matter, not being secreted in the integuments, was formed in a more or less modified state in the internal organs. This, however, is perhaps too hastily generalizing, for it has been found in horses of all colours.

It has also been found in the dog, the cat, the rabbit, the mouse, and the rat.

The symptoms to which this affection gives rise have nothing peculiar about them. They appear to depend, 1. On the chronic irritation that so often accompanies it, whether as cause or effect. 2. On the simultaneous existence of other accidental productions. 3. On the uneasiness mechanically produced by its presence in more or less voluminous masses, from its compressing like any foreign body the parenchyma of the organ in which it is developed.

When neither of these three circumstances occurs, melanosis may arise and become developed in a tissue, without its existence being denoted by any symptom, or any morbid phenomena, local or general.

Such is a very brief sketch of M. Andral's account of melanosis. It is a fair sample of the rest of his work. It is not a book to be perused carelessly; but for serious reading, and especially for occasional reference as to the nature and cause and lesions of almost every disease with which either the biped or the quadruped may be affected, it is invaluable.

## A COLLECTION OF PUS IN THE GUTTURAL POUCHES OF A HORSE.

*By M. REBOUL M.V. Coursan (Aude).*

ON the 7th of July 1833, I was requested to visit a horse that, for some time, had a tumour daily increasing in the parotido-laryngeal region.

*Symptoms.*—Loss of spirits, debility, loss of condition fearfully marked, a dry mouth, accelerated respiration, a hoarse cough, pulse full and concentrated, the temperature of the body elevated, and the mucous membrane red. The horse preserved his appetite both as regarded solid and liquid food, but it was with great difficulty that he swallowed the latter. A little to the left of the larynx there was a hard tumour, prominent and tender, and which was continued in one direction almost to the middle of the channel, and in another almost to the base of the ear—there, and towards the inferior third portion of the parotid gland, it was softer and less painful. The left parotid gland, very little increased in bulk, and not very painful to the touch, evidently contained fluid which fluctuated under the finger. A fætid odour was exhaled from the mouth. A viscid fluid dropped from the mouth, and in which portions of barley were often contained.

I was easy for me to form an accurate diagnosis from these facts, and to prescribe the proper treatment. The proprietor readily conformed to my wishes, and requested me to perform the operation of hyo-vertebrotomy—the opening of the guttural pouch—and which I assured him was the only means by which the evil could be arrested.

Most authors, and among them Hurtrel D'Arboval, say that the operation should be performed, the animal being standing. I was quite of their opinion, the danger of suffocation being so great; but the appearance and habits of the patient leading me to fear



that his struggles would be most violent, I determined to cast him on the side opposite to that in which was the swelling.

The animal being properly secured, I made my first incision along the posterior border of the parotid gland, which I separated from its adhesions. I then assured myself of the respective positions of the styloid apophysis, the occipital bone, and the posterior extremity of the great branch of the hyoid bone. That being done, I was enabled to cut through the stylo-hyoidean muscle, and to penetrate into the guttural pouch, whence immediately issued a considerable quantity of purulent matter, grumous, and of a whitish yellow colour. At this moment, and not having at hand a proper sound, I introduced one of the extremities of a small rod, and directed it so as to form a kind of hernia of the pouch between the branches of the jugular vein. I cut into it, and introduced a seton of twisted tow through the cavity. The horse being got up, the purulent matter escaped abundantly through the inferior opening. A quarter of an hour after the operation the breathing, which had been difficult and hissing, became full and easy.

Six hours after the operation, I revisited my patient. The pulse and the breathing were almost natural, and there ran from the inferior opening into the pouch only a small quantity of puriform matter, with a very slight unpleasant odour. The region of the parotid gland scarcely presented any enlargement; but towards the middle of the channel, and in front of the larynx, there was a point, salient, and painful when pressed upon, somewhat distended, and beneath which I thought that I could recognize the existence of a fluid. The animal ate easily and greedily the small quantity of solid aliment that was presented to him, and swallowed at once, and apparently without pain, three or four quarts of gruel.

This salient and tender point was a new abscess produced by the aliment, a portion of which had been got rid of. I opened it. A jet of purulent matter escaped, bringing with it various fragments of barley, the odour of which was like that which was discharged through the mouth.

I prescribed simple emollient injections into the guttural pouch, and others slightly acidulated into the mouth and the wound between the jaws. The exterior wounds were dressed with digestive ointment, and about six pounds of hay, with a sufficient quantity of gruel, slightly nitrated, were allowed to the patient.

On the morning of the 8th I again visited my patient. He had already assumed his usual spirits, and neither the pulse nor the breathing offered anything abnormal. The discharge from the mouth, and the foetid character of it, were materially diminished. From the inferior portion of the pouch nothing escaped but a small quantity of purulent fluid of a good character. The seton which



occupied the wound in the channel between the jaws was changed. It was impregnated with a great quantity of pus. The diet and general treatment the same.

10th.—The suppuration considerably diminished. Continue treatment.

11th.—Let the animal resume his usual food. The same treatment to the wounds.

12th.—The wound in the channel between the jaws is sensibly diminished, and it discharges pus of a good character. Continue treatment. Let there be in future injected into the opening into the guttural pouch nothing but elder water, slightly acidulated with vinegar.

16th.—Progressive diminution of purulent discharge from the inferior opening into the guttural pouch, and greater contraction of the other wound.

20th.—The seton which traverses the guttural pouch produces scarcely any suppuration, and is therefore removed. The injections to be continued.

27th.—The openings into the guttural pouch are completely closed.

Aug. 1st.—The wound in the channel is healed, and the horse is dismissed to his usual work.

*Le Zooïatre, Mai, 1838.*

## AN INCISOR TOOTH EXTRACTED FROM THE PALATE OF AN OX.

*By M. ROCHE LUBIN, Rodez (Aveyron).*

ON the 14th of April 1837, I was requested by M. Bonhome, near Rhodéz, to extract a tooth growing in the middle of the palate of his young bull. The curiosity of the thing made me hasten to comply with his request. The animal being conveniently secured, I removed the tooth in the usual way. A very considerable hemorrhage followed the extraction of it, which was performed with some difficulty, on account of the tooth being firmly implanted in the palatine arch. It was situated at the middle of the mesian line, between the fifth alveola on the right side and the corresponding one on the left. It was precisely of the same character with the usual incisor tooth of the ox.

This is, I believe, the only fact of the kind on record, the incisor teeth being wanting in the upper jaw of cattle.

*Le Zooïatre du Midi, Fév. 1838.*

## ORMSKIRK MEDICINE.

As a matter of curiosity, and not that one of our readers will use it, we give the original recipe of the Ormskirk medicine for the cure of the bite of a mad dog.

Take of Toad flax (*linaria vulgaris*)  $\bar{3}j$   
 ——— Box (*buxus sempervirens*)  $\bar{3}ss$   
 ——— Bear's-foot (*helleborus latifolia*)  $3j$   
 ——— Primrose roots (*primula vulgaris*)  $\bar{3}j$

These to be boiled in a quart of water or new milk for fifteen minutes, to be strained when cold, and the following ingredients to be then added :

Prepared chalk (or Gascoigne balls)  $3ij$   
 Powdered jalap  $3ij$   
 Prepared steel (*ferri subcarb.*)  $3ij$ .

The above is sufficient for three or four doses for adults.

STUDENTS WHO HAVE PASSED THEIR EXAMINATION AT THE  
 ROYAL VETERINARY COLLEGE.

*January 17th, 1839.*

Mr. W. Butler, Warwick  
 — F. J. Sewell, London  
 — J. S. Hockley, London  
 — J. H. Robinson, Greenock.

*January 23d, 1839.*

Mr. Charles A. Gooch, Chelmsford.  
 — William P. Toll, Launceston  
 — Walter S. Butler, Dalkeith, N.B.

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[New Series, No. 75.]

COMPARATIVE ANATOMY AND PATHOLOGY.

By Mr. YOUATT.

[At the request of several correspondents, these Lectures are resumed; but they shall at all times give way to better matter.—Y.]

LECTURE XXIII.

*The first or Olfactory Nerves—their origin—course—structure—union—bulk in herbivorous Animals—in carnivorous ones, and in different species of the Carnivora. In Birds—the question as to the sense of smell in Birds. In Fishes—its exit from the cranium. The Ethmoid Bone in the Horse—in different Animals.*

FROM the moment that I yielded to the solicitation of some valued pupils, who had been privately instructed with regard to the nervous system of our patients, and commenced these public lectures with the *respiratory system*, I have felt occasional and very considerable inconvenience, and have been too often compelled to solicit the indulgence of my readers on account of unavoidable repetition. The nasal membrane, and the nerve which ramified upon it, could not be passed in silence while we were illustrating that system, because the former lined one of the most important divisions of the respiratory canal, and the functions of the latter were considerably affected by the lesions and diseases of that membrane. After this lecture, however, we shall rarely tread on ground which has already been occupied; and, should these Lectures ever appear in another form, we shall know how to remedy the evil.

*The Organic Nerves*—those connected with respiration, circulation, digestion, secretion, and, in fact, life itself—have been fully considered. Of *the Animal Nerves*—the third, fourth, and sixth, conveying the volitions of the mind to the eye, and the twelfth, to the tongue—the seventh, the old *portio mollis* of the seventh; a partly voluntary and partly involuntary nerve, and discharging, as the case might happen to require, the functions of organic and animal

life—and, finally the fifth, a nerve both of sensation and of voluntary motion as it regards the face—and the spinal nerves, executing the same double office over the remaining part of the frame—of these animal nerves sufficient has been said. There now remain three nerves belonging to the animal system, and especially connecting us with the objects around us—nerves of pure and peculiar sensation; the first, or *olfactory nerve*, responding only to the impression made by the odoriferous particles of bodies; the *optic nerve*, affected only by the particles of light; the auditory, which is sensible only to the vibrations of the air.

The first of these has already been treated of, in the beginning of the fifth volume of THE VETERINARIAN; therefore my present remarks on it shall be brief, and consisting chiefly of new views that have presented themselves to my mind in the last seven years.

*The origin of the Olfactory Nerves.*—If here I venture to differ from some of the anatomical writers in my own profession, as well as from the human anatomist, I do so with diffidence, and should rejoice to be set right. In the first place, I must deny one origin of this nerve from the under surface of the corpus-striatum. I can trace one of the origins of the olfactory, with my friend Mr. Percivall, “along the posterior borders of these bodies, as high up as the middle lobes of the cerebrum,” and until I lose them in the medullary substance of the brain; but not in any portion of the corpus striatum, properly speaking. Beside this, I have on the under surface of the anterior lobe of the brain, on either side, another evident root or source of this nerve, namely, the *corpus callosum*; and there, again, I lose it in the medullary substance of the brain. It is a prolongation of that medullary substance. On the other hand, I have not been able to find in any of our patients the treble origin of this nerve, of which most of the modern human anatomists speak. I can trace their second root to the *corpus callosum*, continuous with the *substantia perforata*, or *lamina cibrosa*; but I cannot find the third source in the extremity of the groove which contains the second root.

*Their course.*—We trace these roots along either side of the anterior lobe, until we are approaching the mammillary processes. Each of them is securely lodged in a groove, into which one of its edges (for it is of a triangular form) penetrates; while its exterior and flattened surface is covered by the arachnoid membrane.

*Structure.*—They are apparently of a medullary consistence. They are the softest in their texture of any of the nerves of the brain; but the minute fibrillæ of which they are composed are readily detected by the aid of a microscope. In all our patients the olfactory nerve is hollow. It communicates, posteriorly, with the anterior cornu of the lateral ventricle; but before it reaches



the ethmoid bone this canal terminates in a blind pouch, so that there is no truth in the old opinion that it was a channel through which any fluid could be conveyed from the brain into the nose. The communication between the ventricles and the cavity within the nerve is effected by small circular canals, which Mr. Percivall calls the *olfactory sinuses*. No satisfactory physiological explanation has been given of the function of these canals.

*Union.*—Thus the two branches of the olfactory nerve travel on, beneath and on either side of the mammillary processes, and gradually approaching to each other, until, a little before they reach the ethmoid bone, they unite. Their canals are now all obliterated—their substance is blended, and they are pressing forward to their destined place of expansion.

*Bulk.*—We are struck with their bulk. They are the largest of the cerebral nerves, with the exception of the fifth; and that, the most important of the whole, requires a considerable development of medullary matter in order to enable it to discharge all its duties. We can now, even before its separation from the brain, observe the varying bulk of the olfactory nerve in different animals, and bearing an evident and beautiful proportion to the necessities of the animal. The structure differs in each, and also the colour and consistence of the nervous cord. We shall find, by and by, that they are distributed on the olfactory membrane in different ways. We shall not, perhaps, be able to describe the design or the effect of many of these varieties, but still it is useful, and not uninteresting, to attend to them.

Observe the development of this nerve, in evident relation with the necessities of the animal. Compare the olfactory nerve of man—in him, connected with pleasure far more than with existence, or even with health—compare it with that of the brute. In the brain of the horse, not more than half the size of that of the human being, the olfactory nerve is four times as large as that in man. Compare it in our different domesticated animals. In the horse it is large, for in a state of nature it affords the only warning against poisonous plants: but, almost over the world, he has become our stabled servant, comparatively rarely sent to collect his own nutriment amidst the herbage of the field, and having the greater part of his food provided for him.

The ox is oftener driven to shift for himself, or, if worked by day, he is usually turned out at night, and needs a somewhat acuter sense of smell. His brain is but little more than half the size of that of the horse, yet the olfactory nerve is nearly as large. In the sheep it is comparatively larger than in the ox. I will state another reason presently for the great development of this nerve in these animals.

These are herbivorous animals, and their adaptation to their situation and food is beautifully developed; but their nutriment is usually within reach, and all that is necessary for them is to be enabled to distinguish the wholesome from the poisonous, and the healthy from the decayed and injurious.

*Carnivorous Animals.*—Let us look to the carnivorous quadrupeds. How indistinct must be that scent which is communicated to and lingers on the ground by the momentary contact of the foot of the hare, the fox, or the deer; yet the hound recognizes it for many an hour—some sportsmen say for more than twenty-four hours. He can not only distinguish the scent of one species of animal from another, but that of different animals of the same species. The bloodhound will follow the track of the man whom he pursues, although hundreds of other men may have crossed his path. The fox-hound, well broken-in, will rarely challenge the track of any other animal, nor will he be imposed upon, when the prey which he pursues has taken refuge in the earth, and thrust out a new victim before the pack.

*Varieties of Carnivora.*—We have still more palpable and interesting illustrations of our subject in the different breeds of dogs. Compare the size of the olfactory nerve in the beagle and in the bull-dog; the one valued for the delicacy of his scent, the other used only for horrible and disgraceful purposes. It is considerably more developed in the diminutive beagle than in the other brute of superior size. I take a still more striking illustration; I examine the greyhound, who hunts by sight alone, and the stag-hound, who hunts by scent. There is not a great deal of difference in their weight, but there is a considerable one in the bulk of brain,—the one a highly intellectual animal—the other requiring not any peculiar degree of sagacity. There is a still more striking difference in the bulk of the olfactory nerve: in the one connected only, and that not to any great degree, with the welfare of the animal; the other identified with the service which he can render to man.

*In the Bird.*—In the feathered biped there is the same proportion between the bulk of the olfactory nerve and the quickness of scent. There has been much dispute on this point among ornithologists. Some have denied the quickness of scent which has been usually attributed to the bird. Audubon—a name that stands deservedly high as a naturalist—says that vultures and other birds of prey possess the sense of smell in a very inferior degree to carnivorous quadrupeds, and that, so far from guiding them to their prey from a distance, it affords them little indication of its presence even when close at hand. In confirmation of this opinion, he states, that he stuffed the skin of a deer full of hay, and placed it in a field, and in a few minutes a vulture alighted near it, and

directly proceeded to attack it; but, finding no eatable food, he quitted it. The vulture was probably attracted by sight; yet it does not follow that he might not also have smelt the hide, although inodorous to the human nose. Audubon farther relates what tells against rather than for him—that a dead dog was concealed in a narrow ravine, twenty feet below the surface of the earth around it, and filled with briars and high canes. Many vultures were seen sailing in all directions over the spot, but none of them discovered the carcass. They were attracted by the smell, but embarrassed by the concealment of the object. The habit of the vulture is to soar aloft in the air, and not to forage on the ground.

In opposition to Audubon, a very interesting account of the *vultur aura* was read at the philosophical meeting of the Zoological Society in March 1837. The writer, Mr. Sells, says that the powers of vision in the vulture are very considerable, and of most important use to the bird; but that it is principally from its highly organized olfactories that it so speedily obtains intelligence of its prey. In hot climates, the burial of the dead commonly takes place in about twenty-four hours after death, and that necessarily, so rapidly does decomposition take place. On one occasion he had to make a post-mortem examination of a body within twenty hours after death, and in a mill-house completely concealed; and while so engaged, the roof of the mill-house was thickly studded with these birds. Another instance was that of an old patient and much valued friend, who died at midnight. The family had to send for necessaries for the funeral thirty miles, so that the interment could not take place until the noon of the second day, or thirty-six hours after his decease. Long before that time—and a most painful sight it was—the ridge of the shingled roof of his house, a large mansion, had several of these melancholy heralds of death perched upon it, besides many more that had settled in trees in its immediate vicinity. In these cases the birds must have been directed by smell alone, as sight was totally out of the question. These anecdotes will not be deemed intrusive, for they settle an interesting point of physiology.

*The Olfactory Nerve in different Birds.*—It is the same in the bird as in the quadruped, the development of the nerve depending on the degree in which an acute scent is necessary to the animal. The head of one of these vultures was sent to Professor Owen, the Curator of the Museum of the Royal College of Surgeons. He determined to dissect the olfactory organs, and he compared them with those of a turkey, a bird that has little need of very acute sense of smell. The distribution of these nerves will be a matter of consideration presently,—we are now speaking of their bulk. They arise by two oval ganglions in the vulture, shewing



some complexity of organization. In the turkey there is no trace of a ganglion, but the nerve proceeds as a small round cord from the anterior apex of each hemisphere; and, in the latter, it is not more than one-fifth part of the size of that in the former. The division of the supra-orbital branch of the fifth pair, which ascends from the orbit, and passes into the nose to the olfactory nerve, is about the same size in both.

In all graminivorous birds these nerves are exceedingly small; and, as their natural food has but little odour, we find that they are easily deceived by almost any thing which bears a resemblance to it. I will give you a little task in comparative anatomy. The subjects you will probably have in your own poultry yard. Dissect the head of a fowl and duck, or a turkey and a goose, for the sake of observing the different structure and size of these nerves,—I will speak by and by of their distribution. The fowl and the turkey have little more to do than to pick up the grain which is thrown to them—their scent is rarely or never put to the test; but the duck and the goose are dabbling all day long in the pools or ditches for some additional food, and they have occasion for an acute sense of smell in order to distinguish the nutritive particles from those that are deleterious. The olfactory nerve, beside its complex origin, is full five times as large in the duck and the goose as in the fowl and the turkey. These, and many others of the same kind, are little anatomical exercises that will do you no harm.

*Fishes.*—Dare I consider these as our patients? I do, and our legitimate ones too. They are destined for food—they are artificially treated in our ponds and stews, and they are subject to disease. I have been three times consulted with respect to them, and, in one case, my advice obtained for me a kind and powerful friend.

All fish are carnivorous, and they are exceedingly voracious. The element which they inhabit, and the nature of their prey, render great acuteness of smell essential to their very existence. The recollections of the fisherman will sufficiently prove that this sense is exceedingly acute in these animals. In punt-fishing, who ever had much sport in the neighbourhood of a brother angler who was provided with carrion-gentles? Here, again, will be an interesting coincidence between the wants of the animal and the provisions which are made for their supply. The olfactory nerves have in them all a complex origin. They arise from the *rudimentary hemispheres of the brain*, as Dr. Grant very properly terms them; and they rapidly swell into tubercles, varying in number and in size, and, in some fish, more than doubling the brain in bulk, and which have by certain anatomists been mistaken for the brain. I will, however, say no more of them, than that this varying bulk



is evidently proportionate to the wants, and to the kind of prey on which the different inhabitants of the waters are destined to feed.

In the *carp*, the *tench*, and the *barble*, they are comparatively small, and simple in their construction—their prey lies at the bottom of the river or pond, and is readily found. In the fresh-water shark—the *pike*—they are more complex, and almost equal the hemispheres in bulk. His destined victims can more readily escape from him, and he needs more powerful olfactory organs to scent them at a distance, and steal upon them unobserved. In the *shark*, the olfactory nerves are more than double the size of the hemispheres, for in the wide and trackless ocean he especially needs their power to guide him to his prey. I can scarcely give credence to the superstition of the sailor, who maintains that the shark will follow, for hundreds of miles, the vessel in which is a poor fellow rapidly approaching his end. This seems to be giving him a power of scent bordering a little too much on the marvellous; yet perhaps you will hereafter listen to that thrilling song of “the old admiral” with somewhat intenser interest, if that be possible.

In the cetacea, the olfactory nerve is exceedingly diminutive. Cuvier says that it does not exist. The weight of authority, however, is against him. In the greater number of the cetacea they can scarcely be mistaken, and in all they can be readily found; but they do not communicate with the respiratory organs, or with the cavity of the mouth. They are merely blind sacs, with no other outlet than the external openings. If they were connected with the branchiæ, through which the water is rushing at every expiration and inspiration, we should have difficulty in conceiving how the different effluvia could make the requisite impression; but in these sacs the fluid, although continually changing, is sufficiently undisturbed for them to have effect.

*The exit of the Olfactory Nerve from the Cranium.*—Human anatomists, who assign to the olfactory nerve three origins instead of the one described by veterinary writers and the two of which I have ventured to speak, describe the compound nerve as leaving the mammillary process and expanding into an elongated bulb, whence filaments descend through the cribriform plate of the ethmoid bone: and they trace the fibræ from the different origins to the different parts of the singular cartilage and bony compartments within the nasal cavity. I confess that I have never been able to do this in a way at all satisfactory to myself. I trace the compound nerve, covered with the arachnoid membrane and the dura mater, from under the mammillary process to the ethmoid bone. It is but a little space; but there is the actual structure of a nerve, between the brain and this perforated bone. There is a distinct nerve; but there is no anastomosis, in order that the impression made on

the ramifications of the nerve shall be conveyed undisturbed and perfect to the brain.

*The Ethmoid Bone.*—When speaking of the respiratory system, seven years ago, in the second number of the fifth volume of THE VETERINARIAN, the structure of that portion of the ethmoid bone on which the olfactory nerve abuts was sufficiently described. It is a thin perforated plate of bone, called on this account the *cribriform* or sieve-like lamella. It occupies the chasm between the base of the ethmoid bone and the frontals. On this the olfactory nerve abuts, and through its minute foramina the pulpy matter of this nerve passes. From the bony arch which surrounds this plate arises a pear-shaped collection of thin, porous, bony cells. They may be likened to a great number of little hollow pedicles proceeding from and forming around the cribriform plate. As they move downward, they belly out into distinct vesicles or cavities; smaller and more numerous behind, fewer in number and larger in front, and each of them, not a simple cavity, but more or less convoluted, while the bony walls of each is of gossamer thinness, and porous as any gauze. All of them communicate together, and are lined inside and out by the Schneiderian membrane—the whole assuming a pear-like shape, attached by its base or greater extremity—decreasing in size as it proceeds downwards—the cells becoming fewer, and terminating at length in one cell—a kind of pedicle or stalk, which passes under the superior turbinated bone, and communicates with the central meatus, and forms a kind of valve over the opening between the nasal cavity and the maxillary sinuses. I am nearly repeating the account which I gave of it when speaking of the respiratory passages in the horse. All of my present readers may not be in possession of the early volumes of THE VETERINARIAN.

On these curiously constructed bones the olfactory nerve, having threaded the cribriform plate, ramifies. It passes through their minute openings, and spreads itself over every one of these little cells. On a portion of these cells the pulpy fibres may be seen to ramify, and they are, doubtless, diffused over every part.

*The Ethmoid Bone in different Animals.*—The *ox* is not so domesticated an animal as the horse. He has more occasion for acuteness of smell, and particularly in the early part of the spring, when the plants are young, and have not acquired their full scent; therefore the ethmoid bone is much larger in him than in the horse. It is comparatively larger in the sheep than in the ox, on account of the greater approach to liberty which this animal enjoys. In the omnivorous swine it is yet more developed; for he often has to search for a portion of his food deep in the mire, or deeper still under the surface of the ground. In the cat, and the

feline tribe generally, it is still larger; but in the dog it is most of all developed—it needs to be so with him on account of the acuteness of scent which he possesses. It occupies nearly the whole of the superior cavity in the dog, and materially trenches on the situation of the turbinated bones in other animals.

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## ON ABSCESS.

*By Mr. PRITCHARD, of Wolverhampton.*

[Continued from page 103.]

BY the term symptomatic abscess, is meant, collections of matter in places situated at a distance from the part where the pus is originally formed.

I have, in my former paper, considered abscesses whose formation was confined to the primary seat of irritation; but if the parts affected possess a lax cellular substance, through the areolar structure of which the matter readily percolates, and, more particularly when the vital energy of the constitution, together with the vascular action, are inadequate to the formation of a barrier of coagulable lymph around the centre of the primary inflammation, fluctuating tumours are then occasionally developed at a distance from the seat of the original irritation, by the fluid proceeding gradually through the cellular tissue to the dependent situations adjoining, and infiltrating the reticular structure, and by degrees increasing to a collection of matter more or less distinct and fluctuating.

We are furnished with instances of this species of abscess in injuries of the anterior spinous process of the os-innominatum, by the fluid travelling the course of the cellular membrane to the inside of the thigh—occasionally on the outside, but more frequently the former situation. It is likewise observable in diseases of the spinous processes of the withers and back. Tumours of pus are produced by this source of accumulation, in front of the pectoral muscles, or in the axilla; and I have also found abscesses underneath the pleura, by an infiltration of the cellular tissue beneath, or at, or near the inferior cartilages of the ribs, having an origin in disease of the dorsal vertebræ.

In abscesses symptomatic of diseases of the bones or cartilages, the matter produced is commonly of a greyish colour, thin, containing flocculi of albuminous substance, portions of phosphate of lime, and, sometimes, small minute coagula of blood. The characteristic fœtor exhaled by this kind of pus is not observed: it is not present until the cavity has been opened, and the fluid acted upon by the



air. If the interior of these symptomatic abscesses are explored, and traced to their origin, the bones or their cartilages, or both, in that situation, will be found to have undergone a very considerable change. They will have become soft, friable, greyish, or black—absorbed to a greater or less extent—and the bones become carious, with destruction of their periosteum. From the cavity of the abscess we shall readily trace a sinus or canal winding its way in the course of the large bloodvessels or the surfaces of the muscles, through the cellular membrane to the primary seat of inflammation and disease of the bones and cartilages. The channel or sinus is commonly surrounded by a softened condition of the adjoining textures, in a friable or lardaceous state, and lined by a dense, smooth, and thick cellular membrane. This canal sometimes dilates into a funnel-like termination, entering the abscess; and the latter, which is occasionally irregular in form, is walled on its inner surface by the same kind of membrane that we observe in abscesses of a more chronic kind.

I will now proceed to a description of the **CONSECUTIVE ABSCESS**. We are to consider this appellation as distinguishing such collections of pus as are found in parts consecutively to its formation in distant situations, and between which no communication exists. I may here observe, it is a matter of common observation, that inflammation taking place in a part, and proceeding to suppuration, the matter thus produced is absorbed, and subsequently formed or found in some other situation. This has led to some inquiry as regards the nature and process of these morbid phenomena, and the circumstances in which these consecutive abscesses occur.

In the human subject this kind of abscess is of more frequent occurrence than in the horse; but in the latter animal it is not unfrequently remarked during the progress of strangles; a species of fever in him to which the term is exceedingly inapplicable, and calculated to perpetuate very erroneous notions as to the nature of the disorder.

I do not consider abscess as essential to the existence of strangles, but commonly following in order or in succession. It is, in every sense of the term, a consecutive abscess. By way of comparative illustration of this kind of tumour:—A man receives an injury on his head; inflammation of the sinuses of the brain follows, succeeded by all the symptoms of a vitiated circulation, and terminating in death. Purulent infiltrations, or distinct collections of pus, are found, on dissection, in the liver or lungs. Confluent small-pox takes place in a child, and during, or following the secondary fever, accumulations of pus are observed in the capsules of the joints. Examination after death presents the cartilages in an eroded state;



and, in some instances, abscesses are found in the internal viscera. In other cases, abscesses disappear externally. The subject of them sinks into fever of a very low character, and dies. Upon dissection, purulent abscesses are found in the internal organs.

In the horse, the foot is frequently injured—suppuration takes place, and, during its progress, the elimination of pus, in a few instances, suddenly ceases. The animal is shortly afterwards observed to be labouring under considerable internal excitation, and dies. On dissection, purulent collections are found in the internal viscera. Thus, during the progress, or subsequent to the fever, of strangles, the animal shews no external abscess; he, however, rapidly declines in condition and strength, and ultimately dies; and, upon examination, presents purulent infiltrations or abscesses in the internal viscera.

In other cases, suppuration disappears in the abscess between the maxillary bones. The animal sinks into a languid depressed state; he can scarcely move his limbs; he feeds sparingly; and an abscess appears externally inside the thigh or some other part of the body, and then he recovers: or hectic fever continues, and he dies; and, upon dissection, collections of pus are found in or about the kidneys, the liver, or the lungs.

In cases of this description the energies and vital resistance of the system are greatly impaired from causes pre-existing to or concurring with the disease, in cases where consecutive abscesses form. As the disease advances, the powers of life are depressed; and the nervous system is proportionately and seriously affected. The circulation becomes weak and rapid, and its fluid is changed in appearance. The softer solids lose their cohesion and vital elasticity. The morbid fluid or pus is collected into one or more distinct cavities, or infiltrated into the parenchyma of some organ. In the latter case, the infiltrated structure is commonly softened; in other cases there is no distinct sac, and the purulent accumulation is occupying several recesses in the softened organ, without any material or remarkable change in the viscus. Occasionally the tissues in the immediate neighbourhood appear impacted around the abscess; but no other alteration is observed. The purulent liquid differs but little from that observed in other abscesses; but when found in the liver, it is generally of a dark greenish hue.

Some doubts may be entertained as to the origin of these purulent formations; but of one thing there is no question,—that they are intimately connected with the primary formation of pus in other parts of the system. The precise way, however, cannot be readily pointed out. It is probable that, from a depressed vital energy and deficient resistance in the constitution, purulent fluid enters the circulation and vitiates the blood, which, in this morbid condi-

tion, depresses the already weakened nervous power still lower. The circulating current, charged with irritating matter, changes the state of the capillaries of the parenchymatous and some other structures, so that without any sign of antecedent or accompanying inflammation, they secrete purulent matter.

Some pathologists have supposed the purulent matter to pass the vessels without mixing with the blood, and to be separated by the capillaries, and by them deposited in the several parts of the body, in which the structure and bloodvessels are most inclined to allow its elimination, and most calculated to admit of its deposition. By which of these modes the actual formation of consecutive abscess is effected, it is by no means easy to determine. In both ways the effect may be produced. The subsequent formation of pus—produced, in the one instance by the diseased matter circulating in the blood, giving rise to irritation in other parts; or a secretion or separation of the pus into the parenchyma of an organ, without preceding or accompanying irritation,—in both these ways the effect may be produced.

The inflammatory action in an abscess may cease at any period of its existence, and absorption of the matter formed in it takes place; in which case the morbid fluid is received into the circulation. Inflammation or pain may develop itself in some other organ, and exercise on the first centre of mischief a true revulsion; or the original inflammation may gradually subside altogether in the abscess, and give rise to absorption of pus. In whichever of the modes the effect is produced, one thing is evident,—that the absorption does not take place until the subsidence of the local signs of inflammation and congestion in the primary abscess. I am much in favour of the opinion, that newly-developed irritation, exercising its influence upon the previous seat of local inflammation and congestion, is the true way in which the consecutive abscesses of strangles are formed.

The animals subject to this kind of abscess are those possessing constitutions of weak vital resistance and defective restorative energy. In the course of my practice I have had cases which I considered the true disease of strangles, occurring in young animals, in which there were no external abscesses, either in the maxillary channel or in any other part of the surface of the body, but evident signs of purulent collection in the lumbar or iliac regions—such as tenderness about the loins, curvature upward, and inability to carry one or another of the hind extremities forward with the usual freedom. To these diagnoses the general symptoms of fever were united.

In the case of a colt brought to me in October last, the property of a neighbouring agriculturist, named Stanley, the singular phe-

nomenon of an abscess on each side, corresponding in locality to each other, had appeared. These abscesses were situated opposite and external to the inferior cartilages of the tenth and eleventh ribs. There was also considerable lameness in the near hind quarter, and sensitiveness in the corresponding loin; without any apparent inflammation or congestion in the thigh or groin. The animal was feverish, weak, dispirited, and off his feed. A third purulent collection had formed internally in the lumbar region. The abscesses on the sides shortly pointed, and were discharged. The internal collection continued to manifest its existence for some time; but became absorbed, and eliminated from the circulating mass, without proving further hurtful to the vital functions, and the colt did well.

Cases of this kind are not unfrequent. They may be overlooked or misunderstood; a circumstance not much to be wondered at, when we consider the general impression received or imbibed both from authors and teachers; strongly associating strangles with the suppurative tumour in the maxillary channel. Consequently, should not the formation of the purulent tumour take place in the last-named situation, the strangles, although existing, is neither suspected nor observed.

I must here repeat, that I do not consider the formation of abscess as essential to the fever of strangles; and the conception of it as a process for the elimination of an obnoxious matter from the system, is untenable upon any principles of pathology or physiology. If it was the object of the constitution to effect such a purpose, the mucous surfaces, the kidneys, and the skin afford abundant emunctories to accomplish this end; and with far less disturbance to the vital powers—an object of consequence, and invariably regarded by the all-wise arrangement of the animal economy. But I am in some degree deviating from the subject of my Essay.

It should be recollected, that two actions are constantly going forward in the surface of an abscess; first, exhalation or secretion; and, secondly, absorption; and whatever tends to irritate, increases the secretion, while that is lessened by whatever diminishes and soothes them. Absorption is also promoted by the latter causes.

Instances occur in which the fluid or matter of abscess is absorbed, and the parts restored to their usual health, without either cicatrix or other deformity; and, in such cases, the purulent matter is discharged from the circulating fluid, previous to accumulating to an extent hurtful to the constitution, by the unimpaired functions of the kidneys, mucous surfaces of the bowels, or other emunctories.

In some instances abscesses remain stationary, producing little or no inconvenience, the inflammatory action in them being trifling,



and their cysts, dense and much thickened, are not readily capable of extension, so that the pus remains inoffensively lodged in its cyst.

I have no doubt that abscesses continue, occasionally, a long time unchanged, producing little inconvenience or disturbance to the constitution; and these instances I have observed more particular when deep-seated. I recollect a case of this kind, a little time past, in a horse destroyed in consequence of an accident, and in dissection of which an abscess presented itself of the size of a hen's egg in front of the renal capsule, and which was the only morbid appearance that we observed.

The cyst appears to increase in thickness and firmness, and the tissues by which it is environed change their condition. In this state, the purulent matter is, as it were, isolated from the surrounding parts, and may so continue to produce no cognizable symptoms, until excited by some fresh circumstance of excitation, when the disease will commence the usual course. This character of an abscess, however, is comparatively rare. In the general course, pus increases instead of diminishing in volume, distends and excites the adjoining structures, and, endeavouring to find an outlet, takes the direction of the skin, or one or other of the mucous surfaces. This is the grand law of the animal economy with regard to the formation and continuance and disappearance of pus. Thus, by the vital resistance which is ever opposed to such matters as are injurious and hurtful to the textures of the body, they are thrust, by a uniform procession of phenomena, to the nearest and least opposing part of the surface, there to be expelled from the system altogether.

It is of importance to the practitioner to know the morbid phenomena as they progress in succession, in order to relieve the system of these collections of pus, and especially that formed in deep-seated or internal abscesses. From extension of the suppuration, or continued secretion from the lining membrane of the sac, the fluid is constantly augmenting. This increase of matter exercises a distending force from the centre of the abscess to the walls, with an equal degree of pressure on the whole circumference, thus forcing outward the adjoining parts to which the parietes are applied. Such of the surrounding textures as exercise the least resistance yield to the increasing pressure; and in this direction the abscess extends in the line that is free. It will be readily observed, that the parts situated beneath or more deeply than the parietes of the abscess must exercise the greatest force of resistance, while the textures placed exterior to it, and deprived of such aid, are more easily detrued by the accumulation of fluid.

In further reference to the pointing of abscesses, it may be ob-



served as a fact of considerable importance, that, the more closely the lining surface of the sac is applied to the adjoining tissue, the more readily that tissue is attacked by inflammation. The more the parts are distended, the closer the internal membrane is applied to them, and the inflammatory action of it extended to them. As inflammation extends to the adjoining structures, adhesion between them and the parietes of the abscess succeeds, and their substance, softened, diluted, and absorbed, at length becomes ulcerated; so that for a considerable period the skin alone resists the expulsion of the fluid. This, at length, by erosion, is reduced to a pellicle, having the epidermis elevated in the form of a phylactena, which, no longer capable of resisting the increasing pressure beneath, gives way, affording an escape to a portion of the fluid, and the abscess is said to have broken.

[To be continued.]

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## A CASE OF RUPTURE OF THE DIAPHRAGM.

*By Mr. W. A. CARTWRIGHT, Whitchurch.*

ON Monday, the 14th November, 1836, I was sent for to see a six-year-old horse that was unwell. He had been driven forty-eight miles on the previous Thursday; and on the Friday he rested. On the Saturday he went thirty-eight miles, on Sunday forty, and on this day, Monday, twenty-four miles, drawing a gig, and the weather, most of the time, being wet and bad. On the Sunday, when he came home, he was thought to have the gripes, and was drenched with a quart of ale well spiced, and which seemed to do him good. On the Monday, when he had gone to the extent of his journey (twelve miles), he was thought not to be well, as he would not eat either his hay or corn; nevertheless, he was driven home, and went very quickly and well, and arrived at Whitchurch about one in the afternoon. He was put into the stable, but would not feed; he was also drenched with another quart of ale, &c. as before. At four o'clock I saw him.

*Symptoms.*—He had been left in a very dirty and slovenly state. His pulse was very quick and small, and, I should think, at least 80 or 90 in a minute. At every seventh or eighth pulsation, there was an intermission of one beat. I could scarcely feel the pulse at the jaw, but was enabled to do so at the chest. His respiration was scarcely quicker than is natural; but there was a peculiar tucking up of the flanks in respiration, as in a broken-winded horse. This, however, was by no means violent, nor could it have

been observed by a common spectator. His appearance was that of fatigue. He sweated much all over, but especially inside the thighs and on the flanks, and the clothing was nearly saturated with it.

*Treatment.*—I ordered him to be well cleaned and to have fresh clothing. His pulse and general appearance puzzled me, and made me scarcely know what to do, or whether I should bleed him: but as I knew that he had been over-exerted, and had already been drenched, &c. and also from his respiration being tolerably free, I declined bleeding him for the present.

Six P.M.—He was as nearly as possible in the same state, but was clean and comfortable, and did not sweat so much.

Nearly ten P.M.—I had been obliged to be absent from him longer than I could have wished, and, at this date, found him altered considerably for the worse, and I informed the owner and attendants that I thought he would live but a short time. His breathing was that of a broken-winded horse in the worst stage. The pulse intermittent as before, and quicker. He was very restless, and the countenance expressed distress. The nostrils and eyelids were injected. He sweated much, especially between the hind legs and down the thighs. I bled him on the off side of the neck, but did not obtain a quart of blood. I also opened the two thigh veins, which were much dilated, but little blood came from them. He now began to stagger about, and was evidently near his end. He fell down, and lay laboriously breathing for about five minutes. He got up again, but soon fell once more; he struggled violently for a little while, and died.

*Examination.*—There was an immense rupture in the diaphragm, extending from the ensiform cartilage and up the middle of the near half, quite to the vertebræ. The lungs on the near side were congested, and had an appearance very much resembling the spleen. The near lung was small, and not half the size of the other, which was emphysematous throughout its whole texture, and of a great size: it had a whitish appearance, and on cutting into it scarcely any blood followed the knife.

*Observations.*—I have no doubt but the rupture of the diaphragm was the cause of this horse's death. The lung on the side ruptured was certainly diseased; but I consider it merely a consequence of it being pressed against the diaphragm and through the rupture; or from some portion of the bowels being forced through the rent upon the lung, and impeding its action. It is a question with me if the pain that the horse evinced on the Sunday was not connected with the diaphragm, and if there might not have been a partial rupture at that time. If the rupture was partially effected on the Sunday, or wholly on the Monday, would there not have been a more in-

creased or even violent respiration than what there was when I saw him? or might it have been violent when he returned on the Monday, and have subsided when he came to rest? or, finally, might it not have been ruptured to a greater extent by him lying down half an hour or so ere I saw him before he died?

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## AN INFLAMMATORY DISEASE AMONG PIGS.

*By Mr. T. HOLFORD, V.S., Northwich.*

ON July 23d, 1838, Mr. Edward Harrison, a wealthy farmer of Vale Royal dairy house, requested my attendance to examine a store of pigs, about twenty in number, at the same time expressing a doubt whether he should not lose the whole herd. I found two in the yard that had died during the night, and, according to his statement, he had lost four others in the course of the two previous days.

My first object was to make a post-mortem examination of the two that had last died; and there was no doubt that the cause of death was suffocation, consequent on an inflammatory attack of the trachea and bronchial tubes; in fact, all the air-passages were filled with mucus. There was also a slight inflammatory tint on the mucous membrane of the colon, attended with constipation of the bowels: in other respects the viscera of the abdomen and thorax were healthy.

On inspecting the living patients, I found the whole suffering more or less from the malady. The symptoms were, great prostration of strength, laborious breathing, constipated bowels, a discharge from the mouth and nostrils, the animal continually coughing, and occasionally by its violence throwing flakes of mucus to a considerable distance. After the attack the skin, from its increased action, became of a scarlet colour; but owing to the blood not receiving its proper proportion of oxygen in its passage through the lungs, it gradually changed from an arterial to a venous hue and character. These symptoms increased in violence, until death closed the scene, which, from the owner's statement, in the six that died was from sixty to eighty hours after the attack.

*Treatment.*—For six of them, whose situation was most alarming, I ordered tartarized antimony and submuriate of mercury, of each three grains, and to be repeated in twelve hours, which produced vomition in a short time after its administration. To those whose skin was of an arterial colour, and as yet no rattling heard in the bronchiæ, bleeding and laxative medicines were administered,

with food of the latter quality, such as whey or gruel mixed with bran.

24th.—I found the six that had had the emetics considerably better, and the medicine was still acting on the bowels. I therefore ordered the same prescription to the remainder; after which was given night and morning for several days, hyd. potas. gr. iij, with occasional small doses of sulphate of magnesia if at any time the bowels became constipated. A liniment of lyttæ et ol. lini was daily rubbed on the parotid glands and trachea, until an irritation was created on the skin of that part of the neck.

By this mode of treatment the disease was subdued, and in a short time the animals became convalescent.

I ought to have stated, that the affection was entirely confined to Mr. H.'s store pigs, and that they ran at large over his estate; and also, that he had six or eight fat pigs, which were confined to the piggery, and which fed out of the same troughs as the store pigs, that were quite exempt from the malady. What was the probable cause of this disease? Was it an epizootic attack? or did it arise from any thing eaten on the farm?

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[Will some of our readers, best acquainted with the diseases of pigs, kindly take up this subject?—Y.]

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## ON THE LOUPING-ILL IN SHEEP.

By JAMES FAIR, *Esq. Lanstruther, Southdean, Roxburgh.*

IN answer to your inquiries respecting a very prevalent disease among sheep in this district, called "*Louping-Ill*," the following are the prominent symptoms of that, hitherto, incurable and very destructive malady.

On the animal's being slightly attacked, there is an evident falling off in condition, and he exhibits a dull heavy appearance, with what may be called a deadness of coat. There is a loss of power in one or more limbs, and sometimes of a whole side, or, even the whole of the animal, as if struck with palsy or tetanus, of both which diseases, as well as apoplexy, it seems to participate in no slight degree: the head and neck being more or less frequently, according to the violence of the attack, convulsively or spasmodically contracted or drawn towards the shoulder or back, with a violent tremor, and constriction of the œsophagus, so as to endanger suffocation when any liquid, however small the quantity, is attempted to be conveyed into the stomach. This is also much retarded, or prevented from being accomplished, by a convulsive and



spasmodic locking of the jaw, a frothy saliva being at the same time emitted from the mouth, more especially when the convulsive fits have come on, which in severe cases frequently takes place from once to twice every five minutes, accompanied by a very laborious and quick respiration. The hurried breathing, however, subsides altogether as soon as the fit has terminated.

In this deplorable state the animal will remain for minutes, hours, or days, according to the severity of the attack; and if he does not rally from it, death sooner or later ensues. Indeed, when sheep affected with loup-ill have once taken the ground, or, in other words, when the state of collapse has commenced, we must have recourse to the knife as the only means of putting an end to their sufferings.

Some few instances, however, have occurred among my flock, when they have most unexpectedly recovered, so as again to follow their neighbours, and get entirely well; and in other cases they have for a length of time dragged a seemingly powerless hind leg behind them, and the left leg oftener than the right one. When this, however, takes place, the limb still remains cold and dead for a time, in despite of the use of friction or stimulants. If it is a fore leg, it is not uncommon, after the sheep gets on its feet again, for a tumour of the size of a pigeon's or even of a hen's egg, filled with pus or ichor, to appear. On being punctured, it presently subsides and is lost. These abscesses usually appear in the neighbourhood of the joints, but sometimes about the arms, the brisket, or any neighbouring part of the body.

Other symptoms of this disease are a wild, excited appearance on being approached by man, dog, or any other animal, and, even by one of their own species—a champing or gnashing of the teeth, and foaming at the mouth while yet on their legs, accompanied by vertigo and delirium, also the assuming of a rotatory or sidelong motion. When these last symptoms, which are those of apoplexy, or determination of blood to the head, are seen, I have frequently restored the animal to perfect health by opening the two veins at the inner angles of the eyes, and whence a copious discharge of blood may be effected; but this can only be done with advantage when the case is taken in time. Venesection would prove highly injurious if performed after the sheep has taken the ground, and entered into the collapsed state of the disease, and ought not to be attempted, although shepherds frequently bleed promiscuously, alike ignorant and reckless of the consequences, and thereby destroy their patient, when tonics, and suitable aliment, as warm milk, or thin flour gruel in a tepid state, would be dictated by the plainest common sense. I may remark, that this class of men are yet, notwithstanding the extensive diffu-

sion of useful knowledge, extremely ignorant of what ought most immediately to concern them, namely, the nature and cure of the diseases of the animals entrusted to their care.

In this complaint there is also not unfrequently, when they have taken the ground, a great appearance of sickness. The animal likewise exhibits great restlessness and anxiety, mingled with debility—he trembles, and tosses his limbs about, as if enduring great pain. At this time there is also less of involuntary tremor and convulsive twitchings than at other stages of the disease; and it seems as if the seat of the complaint was in the heart, or stomach, or thoracic, or abdominal viscera. From such conjectures or realities medical men may be naturally enough led to conclude that the animal is labouring under the attack of some other disease than *loup-ill*; but such is not the case. These are only varieties of the same complaint, which had either previously, or will subsequent to these anomalous symptoms, put on its usual and decisive appearances. In fact, the disease does occasionally assume so many different forms, although each is, more or less, connected and allied with the other, that the most skilful veterinary practitioner may for awhile be puzzled to say whether it is most akin to tetanus, apoplexy, or palsy.

The post-mortem appearances are the following:—There is, for the most part, a quantity of thick and turbid fluid, of a greenish or yellowish colour, found collected in the pleural or pericardic cavity. When the animal dies immediately on being struck, it will often exhibit every appearance of general inflammation. Every part will be turgid with blood; but there has not been sufficient time for gangrene to follow. If the symptoms have not been violent, but the animal lingers for a considerable time, the blood will seem to have been wasted or consumed, and the flesh be as white as if the patient had been bled in the usual manner. A considerable quantity of coagulated or extravasated blood is often found on the brain, and also in the cervical portion of the vertebral canal.

*Loup-ill* is not only *endemic*, or confined to particular localities or districts, but it is often more widely distended, and *epidemic*. As to its *contagiousness* there is considerable doubt. It is also a periodical disease. The usual time of its appearance in hill-sheep is from the beginning of April to the end of May, during which months it commits great ravages, both among ewes and lambs. From twenty to twenty-five per cent. are often lost; and in some seasons considerably more. This is, in a great measure, regulated by the spring being late or early. When the grass comes rapidly to a full bite, the apoplectic attacks are most frequent and fatal. A lamb may be eating, and apparently well, and all at once he springs from the ground, utters a violent scream, and falls

dead. A bullet from a rifle could scarcely do quicker and more certain execution. When he is skinned, the brain and the upper portion of the vertebral canal are found clogged with blood, and all the vessels of the head and neck are turgid with it.

At other times, if the animal is not struck dead at once, but lies stunned and unconscious, a sudden bleeding from the eyes or the nose will give relief. An artificial bleeding from the angular vein, and more effectually from the jugular vein, would have the same effect; but it is a chance whether they are found in this stage, and when alone there is the chance of saving them.

There is little or no *louping-ill* during the autumn or winter months. The ewes and lambs in the best condition are the most liable to be attacked by it, although in the months of April and May, after a severe winter, they rarely are so. It is curious that, to the east of the parish, with the exception of only two farms, nothing of this disease occurs.

If the April and May are mild, less of the disease prevails; but if we have cold and sleety easterly winds, it will be more frequent. Dry, easterly, frosty winds in April and May are also productive of louping-ill to a considerable extent. Cattle, swine, poultry, and even dogs, are liable to the epidemic; but the horse is exempt from it—at least I have never heard of an instance of it in that animal. Where the insects known by the name of *ticks* are prevalent, there will also be louping-ill, and *vice versâ*. The *tick* and sheep-louse have very erroneously been set down, by those who are ignorant of the matter, as one and the same animal.

I leave it to those more conversant in such matters to develop its prevention or cure; and wishing them every success in so important an undertaking, and hoping to hear from you, at some future time on the subject,

I am, &c.

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[We have much gratification in inserting this letter from so intelligent an agriculturist as Mr. Fair; and we cordially thank Messrs. Young and McLean, V.S. of Jedburgh, for giving us the opportunity of so doing. We shall at all times be happy to hear from Mr. Fair. Talented and observant men like him have it materially in their power to assist us in determining the nature, the cause, and the treatment of many a disease among sheep and cattle, of too frequent occurrence and too murderous a character.

Mr. Tait, of Portsoy, gives an interesting account of the same disease, *VETERINARIAN*, vol. viii, p. 614. All our readers may not have read the Ettrick Shepherd's singular description of it. He calls it *thwarter-ill*, *trembling*, or *leaping-ill*. He says that "twenty years ago their ravages were so considerable, that farmers believed the disease to be infectious, and that a stock that was

infected by it was fully as unsafe as a rotten one. It still exists on some straggling, dry farms, where the ground is visibly overstocked, and in dry frosty seasons, when the spring is hard and severe. In such places, if March and April are barren, no succulent nor almost even any green thing, is to be attained by the poor creatures for a long space of time. It is easy, then, to conceive the emaciated state into which this must throw them. If at this time they happen to get an overstretch in running or leaping, or even a hasty start or crush in the fold, numbers fall a prey to this disorder, or rather to these various disorders. Some will fall down and die in two or three minutes—others will lose the power of one side, and lie sprawling until they die of hunger—others, again, will lie shivering, and very sick at times, until death comes to their relief; while a few will go a long time quite lame, sometimes carrying one limb, and sometimes another, until they are likewise quite exhausted.

“In the first case, when they fall down and threaten instantly to expire, which is certainly an apoplectic shock, I have seen bleeding, by cutting a piece from the tail, or opening a vein on the inside of the fore thigh, give immediate relief. In all the other cases, the best method is to take them home, and feed them with strengthening food, until they gradually recover. If once, by this strong feeding, they are attacked by a temporary diarrhœa, they will recover very fast.

“This distemper is peculiar to dry soils, and prevails in dry barren springs, when the wind settles in the east. If the sheep are in good condition, they are not nearly so apt to take it: but if they are either low of body, or the wind have a tendency to centre easterly, the greatest care must be taken to use the flocks gently, and it is highly commendable to decline underlocking them altogether, cutting off the wool round the udder in ewes that are near the time of yeanning, as the fatigue which they thereby undergo, and the cold which thus penetrates to the most tender parts, are often attended by the most fatal consequences.”

If to these valuable opinions of practical men, a northern *veterinary surgeon* would kindly add the result of his researches and experience, he would confer great obligation on us, and on the profession.]

Y.

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## ON DRENCHES.

THE Editor acknowledges the receipt of a letter from Mr. Wardle, of East Sheen, on this subject, so warmly contested by Professor Stewart and Mr. Markham. It commences with many expressions of kind regard, more highly valued as coming from an old and esteemed friend, and which he must endeavour to deserve; but the pages of THE VETERINARIAN must be occupied by better matter.

Presently returning to the main object of his communication, the consideration of the propriety or impropriety of administering draughts to the horse, he begs it to be understood that he comes not forward as the partizan of either of the disputants, but merely as the chronicler of facts that have occurred in his practice, extending through nearly twenty years. "I have," says he, "in all cases administered draughts where they seemed to be preferable to the ball, and in the course of so many years these have not been a few; and I feel no hesitation in stating, that I have never experienced any injurious consequence from this practice: on the contrary, I have frequently accomplished by means of the drench that which the ball would never have effected: I am assured of this. The impression that I wished to make on the constitution was much sooner and far more decidedly effected.

"The difficulty and danger of drenching is occasioned by the *fuss* that is made about it. Those who, like myself, have been in the habit of a country practice, have seen four or five persons surrounding the poor patient that is about to be drenched: one of them carries a halter or rope—a second brandishes a twitch—a third carries a stable-pail in one hand and a horn in the other—and a fourth brings up the rear with a quart bottle containing the medicine. As the cavalcade approaches the patient, rendered irritable by the disease under which he labours, he begins to think 'What have I done that all these persons, and armed with such formidable weapons, should be drawn up in array against me?' He feels alarmed—to that speedily succeeds a determination to resist, and no one can be surprised if much difficulty and a determined resistance occurs to the administration of the medicine. In such cases, I am willing to admit that bronchitis, or any other evil, or death itself, may occur.

"When I have to administer a drink, long experience has taught me a quieter, a more expeditious, and a perfectly safe way of going to work. I order every one to keep at a respectful distance, or, in some instances, to leave the stable; and I go up to my patient, and pat him and make much of him, and then, quietly drawing a pint

bottle from my pocket with my right hand, and gently raising his head with the left hand, I find, sometimes at the first effort, and certainly in a little while, no difficulty in administering the medicine with perfect safety, and with slight annoyance to my patient.

“A case lately occurred in which a horse, seriously ill, had been excited almost to madness by this phalanx of tormentors. I ordered every one of them out of the stable, and went quietly up to the horse. Nearly a quarter of an hour elapsed before I could divest him of all his fears, and then he permitted me to administer the draught without the loss of scarcely a drop.”

The Editor has likewise received a letter from Mr. Daws, addressed to Professor Stewart. He was, during many years, assistant to Mr. Mavor, and has been during the last two years in practice for himself. The Editor has had the gratification and the advantage of perusing a diary which, with most commendable diligence, he kept of every important case.

He finds fault with the title of the 4th “Letter to a Student,” headed “Beware of Drenches;” and he asks, Is it not universally admitted that medicines given in a fluid form possess various advantages over those exhibited in a solid state? Are they not diffused over a larger surface? and do they not more readily excite or allay, as circumstances may be, certain actions or states of the membranes with which they are brought into contact?

He then adverts to the supposed danger attending the act of drenching, and asserts what, from the character of the man, and the extensive practice—almost unrivalled—in which he has been employed, the Editor believes to be literally true,—that he has given no less a number than ten thousand draughts without ever producing serious annoyance or inconvenience, and many of these being of a most nauseous description.

His mode of management was simple enough, namely, by causing the animal’s head to be lowered, if the slightest disposition to cough was produced while the draught was passing through the pharynx or over the glottis, and by coaxing and using gentle means, if the animal was in the least degree irritable.

In the December Number, in the close of his observations in reply to Mr. Markham, the Professor submitted six points for the consideration of the experienced veterinarian. To the first and second he had given a complete contradiction. With the third, fourth, and fifth, he differed entirely, but with the sixth he cordially agreed,—“a bottle in the hands of an able and experienced person was a far better instrument for administering fluids than any other.”

Mr. Daws concludes by observing, that he frankly acknowledges the talents of the Professor, and trusts that he shall see many use-

ful and pleasing essays from him in *THE VETERINARIAN*; but they must be less positive, and less caustic.

We are now writing on the evening of the 17th, when the far greater part of our Number ought to be in the hands of the printer. Leaving to Mr. Stewart the privilege of a reply, we really think that this subject should be dropped. In the opinion and the practice of the southern veterinarians, while a ball is generally adopted as most convenient to carry and to give, there is no hesitation in administering a drench when there are circumstances about the case which seem to require it; and there certainly is not the danger which Professor Stewart imagines in administering a drench to our southern horses. Y.

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## THE DIPLOMA OF THE EDINBURGH VETERINARY SCHOOL.

THE following is extracted from a communication received from Professor Dick.

"In answer to 'A Highland Farmer,' I beg to state, that students who have obtained diplomas at the Scottish Veterinary College *are* eligible as veterinary surgeons in Her Majesty's army, and in the Honourable East India Company's service. The arrangement was effected last summer by his Grace the President of the Highland Agricultural Society, and the War Office, and the Board of Control. I am somewhat surprised that 'A Highland Farmer' should have sent to you to ask about this, when in almost every Scottish newspaper he might have seen the circumstance advertised, under the authority of the Society, and the announcement signed by their Secretary.

"The pupils thus applying at the Horse Guards for commissions in Her Majesty's army, will have to undergo an examination by the Veterinary-Surgeon-General for the time being. Those applying for the Indian army will be examined by the Veterinary Surgeon to the Company, and precisely in the same manner as is practised in the case of human surgeons applying for situations in the army and navy.

"To some, another examination may be considered a formidable barrier to get over; but, I trust, no pupil of mine will ever be able to obtain such a situation, unless he pass with honour to himself any fair examination which he may have to undergo respecting his professional abilities.

"As to priority on the list, it could be proved, in almost a hundred

cases, that the order of that list has not been observed. It always requires some degree of interest to obtain such a situation, and for a well-qualified man far more will depend upon that than on the numerical list."

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## ON INTERMITTENT HOOVE IN THE OX.

*By M. PRADAL, M.V., Castres (Tarn).*

[This interesting paper was originally drawn up with reference to the redhibitory laws in France. We will extract so much of it only as has reference to the nature and treatment of the disease.—Y.]

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I KNOW but of one case similar to those which I am about to relate. It was given by M. Dorfeuille, and inserted in the *Correspondance de Fromage*, June 1, 1830:—

CASE I.—On the 6th of June last, M. Barther, of Lardailié, required my prompt attendance on one of his oxen that was hoven to an extraordinary degree. On my arrival, I found that he was, indeed, in a most desperate state. His paunch was as inflated as it could possibly be: the tongue was swelled and hanging from the mouth—every limb trembled, and the animal was covered with profuse perspiration. The eyes were haggard, the head extended, and every thing announced approaching suffocation.

I immediately punctured the paunch, and the animal was relieved as it were by magic. Two quarts of wine were then introduced into the rumen through the canula, and, half an hour afterwards, the animal ruminated, and even searched for food. The canula was withdrawn two hours after the operation. Six days passed without any accident; but on the seventh day the animal, having returned from work and fed as usual, was again hoven. The trochar was again had recourse to, and with the same results.

*July 6th.*—The meteorization returned, but in a slighter degree. I administered, at two doses, a pound of the sulphate of magnesia, dissolved in a decoction of centaury. On the following day, the enlargement of the paunch, and a black and fetid diarrhœa had ensued. I thought that the diarrhœa would have caused the enlargement of the paunch to abate, but I was deceived; for instead of diminishing, the extrication of gas increased to such a degree that I was compelled to puncture the flank. The canula was now kept in the opening by means of a wire.

On the 2d August it was displaced, and the animal went on well until the 10th, when the paunch was again evidently inflated.



On the 15th it was distended to a very great degree. The owner now punctured the animal himself. It was the fourth time that the operation had been performed. He again fixed the canula, which fell out during the night of the 24th, probably in the struggles of the animal, who was found dead on the following day.

*Post-mortem examination.*—There was adhesion of the rumen to the diaphragm, and to the left flank; also to the liver and spleen. Beside this there was no morbid appearance in the abdomen; but between the two lobes of the lungs and the folds of the mediastinum, where the œsophagus passes in order to arrive at the diaphragm, I found an encysted tumour of a pyramidal form, nine inches in length, and weighing five pounds. It was adherent by its base to the circumference of the diaphragmatic opening. Its surface somewhat resembled the cerebellum of an animal, and its interior presented some clay-coloured concretions. The edges of the pulmonary lobes were adherent to the diaphragm.

CASE II.—On the 1st of September 1837, Mr. Combes bought a pair of oxen, one of which became hoven on the following day. It was thought that he had been gorged with food, in order to give him a plump appearance at the fair, since, being put on somewhat short commons, the enlargement disappeared, and the animal appearing to be in a state of health, he was put on the usual regimen, and sent to work.

A new meteorization, which took place on the sixth of October, disappeared after rumination; but it returned, and to a greater extent, on the 7th, when I was summoned. The enlargement of the paunch took place both during work and after feeding. The beast also had a hoarse cough. The proprietor sold him to a butcher, and he was killed on the 28th of October.

Examination after death brought into view an encysted tumour, in the same situation as in the first case, with this difference, that it was less oblong, of almost the size of a man's head, and weighing nine pounds. Its envelope was thick, and composed of three laminæ; and on being punctured, it was found to contain five pounds of purulent matter, of an infectious odour, and of the consistence and colour of the yolk of an egg. The lungs were flabby. There was no other morbid lesion.

CASE III.—On the 15th of October 1831, I attended on an ox that had an incessant cough. The tongue protruded from the mouth—there was a considerable discharge of saliva—the eyes were haggard—the inflation of the rumen was very great, and every thing seemed to indicate the approach of death.

I was at first disposed to attribute the enlargement of the paunch to over-feeding, and I punctured the side. The enlargement sub-

sided, but the patient was continually moaning—the tongue still hung out, and the saliva dropped from the mouth.

Imagining that the presence of some foreign body in the diaphragmatic portion of the œsophagus might have something to do with the distress of the animal, I administered a bottle of olive oil. Half of it was ejected by forcible contraction of the muscles of deglutition, as in vomiting. Some time after that the animal was purged. To this succeeded an almost immediate remission of the symptoms, which led me to believe that the strangulated body had passed into the rumen.

This animal coughed occasionally during several days, and was sometimes blown after feeding; but being submitted to proper treatment, he became well, and returned to his ordinary work. I do not know what ultimately became of him, for I lost sight of him.

*Zoöiatre du Midi.*

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[These are interesting cases. It is very easy to conceive that, in the first of them, the adhesion of the paunch to the left flank and diaphragm would very much limit the power of the stomach to make the food revolve through its different compartments, and that the consequence of its slow progress, and, occasionally, the total arrest of its march, would favour this fermentation, or necessarily produce it. We can also readily believe that the pressure of these enormous tumours on the œsophagus would, to a certain degree, interfere with the process of rumination, and might totally prevent the occasional eructation of the extricated gas, and the relief thereby obtained; and it would be interesting in cases of intermittent hoove to examine, after the death of the animal, whether the thoracic cavity contained any of these abnormal growths. We should be directed to a valuable diagnosis and prognosis too. The truth of the matter, however, is, that we have too many of these cases of intermittent hoove. It is rare that the over-distended stomach of the hoven beast quite recovers its former energy. Rumination is suspended after the slightest debauch, and, perhaps, is seldom effectually performed. In the great majority of cases it will be prudent to get the hoven beast ready for the market as quickly as that can with safety be effected.—Y.]

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## IMPERFORATE ANUS IN A CALF.

*By Mr. B. BULL, Worthing.*

THIS animal lived five days after the birth. No medical treatment was attempted. The usual situation of the anal orifice was perfectly level, and presented not the slightest trace of any opening.

I had an opportunity of examining it after death, and found that the rectum was turned back five or six inches from the usual place of the anus, and inserted like a muscle upon the os pubis, with an almost perfect obliteration of the canal four or five inches in length.

## HERNIA.

IN a letter from Mr. STORRY, of Pickering, principally on other matters, I find the following description of his manner of operating in cases of umbilical hernia in colts:—

After having cast the patient, and secured him on his back, he takes hold of the extremity of the hernial sac, and by gentle manipulation and pressure, he returns the intestine into the abdomen. He then makes an incision over the orifice, through which the gut protruded, and carefully separates the skin from the sac. He again grasps the sac, now denuded, and gathers it up as tightly as he can close to the hernial aperture, and ties round it a white leathern lace or string, introducing a few stitches through the part which he is tying until it is completely secured, when he cuts off the now superfluous part of the sac.

He finally brings the integument together, closes it by suture, and puts a strong adhesive plaister over the whole.

## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

THE reputation of Professor Tiedemann is sufficiently established on the continent. The translation of the first volume of his *Comparative physiology* by Drs. Gully and Lane has introduced it to the English reader, and it now finds a place on the shelves of every medical and scientific person. From the library of the veterinary surgeon it should not be absent.

He had previously, in conjunction with Professor Gmelin, published a work on Digestion, which has not been translated into our language. The work was, probably, deemed too profound even for the common medical reader. It includes the four classes of vertebrated animals, the mammalia, birds, reptiles, and fishes. It commences with the consideration of the properties and chemical composition of the various glandular secretions which are concerned in digestion—the saliva, pancreatic juice, bile, gastric juice, &c., and inquires into the alimentary substances, whether animal or vegetable, which are received into the alimentary canal, and the changes which they undergo in the several divisions or compartments of that canal. These are most interesting inquiries, and the result of each is verified by the most ingenious and careful experiments.

In many a future number it is our intention to translate these results as it regards our patients. They will afford us pretty nearly all that we can want.

### THE SALIVA.

In all animals, with the exception, perhaps, of the cetacea, there are found around the cavity of the mouth many conglomerated glands, of different forms and magnitude, which secrete from the blood a peculiar fluid called the saliva, and which is furnished by certain excretory canals. The size of the different glands, and the situation of the orifices of their excretory canals, have, to a certain point, in the mammalia, a relation to the situation of the teeth, and to the part of the mouth in which the aliment is chiefly submitted to the action of the teeth. The secretion of the saliva in a small quantity is continually going forward; but it is most abundant when food has been introduced into the buccal cavity, and begins to exercise its influence on the nerves of the tongue and the mucous membrane of the mouth. This influence is propagated to the salivary glands by means of the second and third branches of the fifth pair of nerves, and it disposes these organs to furnish a copious secretion of the salivary fluid. The salivary secretion is equally great, when effluvia from the food are brought in contact with the membrane of the nose; and in this case the exciting influence appears to be transmitted to the nerves of the salivary glands by the posterior nasal nerve which emanates from the sphenopalatine ganglion.

The Professor submits the salivary fluid of the human being, the dog, and the sheep to various chemical analyses, from which the following are the results.

1. The saliva does not contain more than from 1.0 to 2.5 per



cent. of solid matter, and that prevails most in the saliva of the dog.

2. The solid portions consist of—

A. Salivary matter.

B. Osmazôme.

C. Mucus, which appears to be partly dissolved in the fluid by means of an alkaline carbonate, and which gives to it its flaky appearance.

D. A very small portion of albumen.

E. In the saliva of the human being, a small portion of fatty matter, containing phosphorus.

F. The soluble salts in the fluid are—

a. An alkaline acetate, the presence of which is only demonstrated by incineration, and not by the extraction of an acetic acid.

b. An alkaline carbonate, which gives to the saliva the property of turning the tincture of turnsol blue, and, in the sheep, causing it to effervesce with acids. It is in the state of a bi-carbonate. The saliva of the sheep contains the greatest portion of it; it is less in that of the dog, and least of all in that of the human being.

c. An alkaline phosphate, greater in quantity in man than in the sheep or the dog.

d. An alkaline sulphate, existing only in minute quantities in either of them.

e. An alkaline chloruret, in great abundance in all three of them.

f. An alkaline cyanuret, in greatest quantity in the saliva of the human being, in a smaller degree in that of the sheep, and not found at all in that of the dog. The alkali in the saliva of the human being is almost entirely potash. That in the dog and the sheep consists of soda, with very little potash.

G. The solid salts in the fluid portion of the saliva are—

a. A considerable quantity of phosphate of lime.

b. Less of carbonate of lime.

c. A small quantity of magnesia in that of man, but which has not been found in either of the others.

## BIRDS.

The glands which secrete the saliva in birds are far less developed than in the mammalia. Two small glands are found under the tongue in the angle formed by the union of the two branches of the lower jaw. In their situation they nearly correspond with the sublingual glands of the mammalia, but they very much differ from them in their structure. They are composed of small hollow globules, with numerous minute openings, resembling compound muciparous glands. Other glands of the same kind are found in

the palate, and at the root of the tongue are a few isolated and scattered muciparous glands.

The fluid which they secrete is of a greyish white colour, of considerable consistence, slightly viscid, and with a faint saline taste. The salivary secretion in birds is very small in quantity, and cannot have much influence in the act of digestion. It facilitates the swallowing of the food, by moistening and in some degree softening it.

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### ON EPIDEMIC PNEUMONIA.

*By V. CANTIELLO, V.S. to the Queen's Regiment of Cavalry, Naples.*

PNEUMONIA, or Inflammation of the Lungs, has been often and well described by veterinary surgeons; but there was a peculiarity about that which prevailed during the last year (1835) which deserves to be recorded. It was sadly prevalent and fatal, and a great many of the horses that were attacked by it died in a very short space of time.

During the month of October 1835, the greater part of the horses belonging to the Queen's regiment of cavalry were suddenly attacked by an epidemic disease, and they were generally the youngest and those in highest condition that first failed. The earliest symptom, and very sudden in its appearance, was great difficulty of respiration, and total loss of appetite. The labour of breathing was sometimes so great that the animal was apparently threatened with suffocation—the legs seemed to be cramped—the hind legs were immovable—the posterior part of the frame appeared to be paralyzed, and when the animal was forced to move, the legs could scarcely sustain his weight. The mouth was open, and its membrane of a dark colour, almost approaching to black.

The labour of breathing rapidly increased—the flanks beat violently—the nostrils were dilated—the tongue and palate dry and hot, and of a still darker hue—the breath hot and fœtid—the conjunctival membrane deeply injected—the pupil dilated, the ears dependent and cold, and the veins of the face distended. There was also cough, not free and sonorous, but faint, and interrupted by some internal spasmodic action, followed by a considerable mucous discharge from the nose. There were other peculiarities: the tail was immovable—the mane coming off at the slightest touch—the hair erect—the skin dry, and adhering to the subjacent parts—the urine small in quantity—the bowels constipated—the extremities cold—cold sweats at the flanks and scrotum—erection of the

penis, and general immobility of the animal. The pulse was hard, and little developed at first, but it soon became full and strong.

To these soon supervened fœtid discharge from the nose—the breath also becoming still more fœtid—the mouth and body generally cold—the countenance of the animal having a piteous expression—the hair standing on end—the head depressed—the pupil dilated, and the eye fixed. The pulse now became small, and intermitting and soft—the perspiration at the flank ceased, and death evidently approached.

Little could be prognosticated with regard to the duration of the disease, from either the nature or the succession of the symptoms. Some horses died on the third, others on the fourth, and others not until the eighth day from the first attack. There were many, however, who did not survive the first day; and some, while they were feeding, and with every appearance of health about them, dropped and died as if from apoplexy.

*Post-mortem appearances.*—The mucous membrane of the trachea and bronchi was ulcerated—eroded, and filled with pus. The bronchial glands were enlarged, and turgid with blood, or sometimes suppurating. The substance of the lungs was hepatized and enlarged, and then ulcerated, and softened, so that it might be torn with the greatest ease. Its exposed cells were filled either with serous fluid, or with grumous blood and purulent matter, of almost a black colour. The inflammation extended to the pleura, and even to the pericardium and diaphragm. In every lingering case effusion was discovered in the thorax.

These lesions sufficiently proved that the disease was essentially inflammation of the lungs, had the difficult breathing, the peculiar character of the pulse, the coldness of the extremities, and the attitude and motion of the patient left any doubt on the subject.

*Treatment.*—As many horses were attacked at the same time, we were at first disposed to believe that it was some contagious malady that had crept into our stable; and therefore certain preventive measures were adopted, such as diligently cleaning and fumigating the stables, and separating the healthy animals from the sick ones.

As soon as the disease was evident in any horse, he was bled from the jugular vein, and also from that which is commonly called the girth vein. The quantity of blood abstracted was always considerable, but regulated by the temperament and strength of the animal, and the apparent intensity of the inflammation. This decisive measure seldom failed in some degree to relieve the animal, and in some cases was sufficient to cut short the disease at once. Setons in the chest and blisters were also used, and emollient injections were thrown up. Internally nitre was given in

solution, acidulated with sulphuric acid. Aperient medicines were not forgotten, as olive oil, and even saline purgatives, as cream of tartar, when the pulmonary inflammation seemed to be complicated with gastritis. This mode of treatment was exceedingly serviceable when the disease was in its first stage. By the bleeding, the pulse was reduced in frequency—by the nitrated drinks and opening medicine, copious motions, and sedimentous urine, and general perspiration, were procured. The ears and extremities became warm—the pulse was developed, yet soft—the cough and difficulty of breathing were relieved—the animal became more lively—it could walk a little without apparent pain, and it ate a small portion of food.

It, however, not seldom happened that the attack was most sudden and intense, and from the age and temperament of the animal, or other circumstances, it had most fearfully progressed before it was noticed. Then emetic tartar was given dissolved in water, and which operated more quickly and decidedly as a sedative than did the nitre; it also had more speedy and powerful effect on the urinary organs and the skin. From two to four drachms of it were dissolved in a small pail of water, and placed within the reach of the animal. Olive oil and cream of tartar were also given as aperients, and, if they were not sufficiently powerful, recourse was had to aloes.

We often had to contend with cases that bade defiance to all these remedies. Then the digitalis was had recourse to, in doses of from  $\text{ʒii}$  to  $\text{ʒx}^*$  morning and night, with one ounce of pure nitre. Every one is acquainted with the sedative effect of the foxglove, and especially on the arterial system, and the pulse usually diminished by degrees, both in frequency and in strength.

The extract of the common henbane was also given in doses of half an ounce, when the difficulty of respiration seemed attributable either to pain or spasm.

On the decline of the inflammation it is almost impossible to express the benefit derived from the kermes mineral†. Whatever be the composition of this drug, it is certain that it operates specifically on the lungs, promoting the evacuation of the mucus and other matters collected in the bronchial tubes and parenchyma of this viscus, and which would not fail, by their quantity or quality, to produce new inconvenience or disease, and impede the resolution of the primitive one.

By this mode of treatment many horses were cured; but in ge-

\* Of the tincture most assuredly, but not of the powder or the extract.—Y.

† A hydro-sulphuretted oxide of antimony, now almost discarded from our pharmacopœia, but once in as high repute in England as it is now in Naples.—Y.



neral, when considerable organic lesions had taken place in the lungs, neither these remedies nor any others would succeed; but vomicae, plural adhesion, and acute or chronic hydrothorax, closed the scene.

*Causes.*—It may appear singular to some readers that I take this division of my subject last; but I must confess that I have no certain proof with regard to the cause. It arose not from any peculiarity of temperament, of situation, or of food. This was put most strictly to the test. The water, and the provender, as well green as dry, were scrupulously examined, and proved to be altogether without fault. There was no unusually hard work—no want of cleanliness in the stables. The disease was, however, very materially connected with the situation of the stables. It was confined to those horses alone that were exposed to the mountain wind, and the wind blew with unusual coldness and violence from the mountains at that time. This might be taken as a predisposing cause; it might, as frequently as otherwise, be the exciting cause. In many places in the country, where there was the same exposure to these winds, there were similar diseases; and as soon as the wind changed, and the weather became milder, the disease gradually declined, and at length ceased altogether. In cases of a milder form we can often readily trace this atmospheric agency, and the more vital organs are not exempt.

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[We are indebted to the kindness of Mr. Ernes for this translation from the Neapolitan Veterinary Journal, edited by Professor Ferdinand de Nanzio.—Y.]

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## ON FRAGILITY OF THE BONES IN CATTLE.

*By* HERR BRUNCK.

[Continued from p. 65.]

AT the meeting of the Committee of the Agricultural Society of Rhenish Hessa, on the 13th of February, 1837, their vice-president, Herr Brunck, burgomaster in Fürfelden, an extensive and scientific agriculturist, gave the following account of this malady:—

The disease known by the name of “Fragility of the Bones in Cattle,” and which has prevailed during several years in this province, has caused great loss to agriculturists and the owners of cattle; not only from the value of the cattle that die under it, but from the injurious influence which it exerts on agricultural labour and the cultivation of the vine; and should it continue much longer, it will inevitably cause the total ruin of many farmers. It is highly necessary that the Government should interfere, for as yet no one has discovered either the cause of the disease or any means of cure.

An attentive examination of the progress of this disease has convinced me that the present treatment and nursing of cattle in so careful and artificial a manner is not suitable to the nature of the animal. It is an incontestible fact, that these animals fare better when suffered to roam in the open air and find their own nutriment, even though it be scanty, than when shut up in damp ill-ventilated stables, and over-crammed with artificial food. A sufficient proof of this opinion is, that draught oxen that after their work are turned out into the fields during the greater part of the year, where they enjoy pure air, exercise, and natural food while it is to be had, and hay, straw, and oats at other times, are totally exempt from this disease.

The same may be observed with regard to draught cows, which are used during a part of the year in agricultural work, and are then treated in the same manner as the oxen. They are never attacked by this disease; while the milch cow, who is scarcely ever permitted to go out of her stall, and is denied fresh air and exercise, and fed on soft and artificial food, is most subject to this disease, and indeed the only animal that is subject to it. Believing, as I do, this unnatural confinement and artificial mode of feeding to be the real cause of this disease, I should recommend, as means of prevention, if not of cure, to all owners of cattle,

1. That they shall give up all their present cow-houses.
2. That they shall take care that the animals have pure air, and are kept clean.
3. That they shall build new cow-houses in different places, and see that they are well ventilated.
4. That they shall take care that the cows are let out every day when it is possible, either to water or to exercise; and that at the proper time of year they are driven to good clover or meadow land.
5. That they shall be differently fed, and dry nourishing fodder given, and not that which relaxes the stomach and bowels.

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#### ON THE SAME DISEASE.

*By Dr. SAMESREUTHER, of Wörrstadt.*

IN Nos. 16 and 17 of the Agricultural Journal of the Grand Duchy of Hessa, for the year 1837, we find a contribution from the above gentleman "On Brittleness of the Bones in Cattle, prevalent in Hessa."

This disease, which has been more or less prevalent for several years, and which still exists to a very great extent, and is the cause of serious loss to agriculturists and farmers, consists in general loss of condition, and loss of milk.

If we consider the peculiar manner in which cows are kept and nursed in our province—the total want of exercise, and of that which is so necessary to animal life, fresh air—the quantity of unwholesome food which is given to them—and the absence of necessary cleanliness—we can only be surprised that fatal epidemics do not break out much oftener among them. Instead of filling the rack with good clover or meadow hay, which is the natural food of the animal, almost all owners of cattle use only those kinds of fodder which are bad or spoiled, and difficult of digestion, and which irritate and weaken the intestinal canal. It is by feeding cows on turnips, mangel-worzel, red potatoes, &c., and giving them warm mashies and drinks, that the normal functions of the stomach are disturbed and digestion impeded. The quantity given is as objectionable as the quality. This ill-judged method of feeding is doubtless the cause of the cessation of the secretion of milk. It is erroneous to consider this disease as peculiarly appertaining to the osseous system, although, as it proceeds through the different organs, it weakens the bony apparatus, and thus proves itself to be that epidemic known as “brittleness of the bones.” The injurious influence of the food used is increased by want of exercise and pure air; for the poor animal is confined in a narrow space from its birth to its death, and forced to breathe an air impregnated with various poisonous gases.

The disease is rarely found in those places where the cattle are turned out in the fields, or regularly exercised and allowed a good supply of pure air, as in the provinces of Starkenburg and Upper Hessa. Cows kept for agricultural labour are very rarely attacked by this malady. I have no doubt that the usual treatment of oxen, their solid natural food, and the exercise they are made to take, are the reasons of their being never attacked by it. In many places where cattle breeding is carried to a great extent, but where the animals are worked and allowed to pasture at large, or fed on good hay and have plenty of water, fragility of the bones is never heard of.

If we deny the contagious nature of these diseases, and consider them as commencing in the digestive system, and producing corruption of the humours or fluids of the body, how shall we account for their gradual increase and present prevalence?

The first and most essential point is, to ascertain whether or not this disease is hereditary. There is no doubt that the peculiarities of the parents will descend to their offspring, and thus far this disease is hereditary. Hereditary predisposition may be much farther traced than is generally believed. I have seen cases where good or bad teeth have been transmitted from the parents to their offspring, also fine white or hard horny skins, predisposition to pulmonary complaints, defective vision, &c.



Almost all the cattle in these districts are more or less predisposed to this disease; and the period and manner of its appearance are influenced by the strength of the animal's constitution, or the treatment which he receives.

The cure of this fragility of the bones is very difficult, particularly as it is seldom noticed by the farmer until it has reached its height, and some of the bones are already broken. When this is the case, there is no hope of cure. If, however, the disease is discovered while yet in its infancy, and the patient is placed in the hands of an educated veterinary surgeon, and not an empiric, there are hopes that a cure may be accomplished.

Should the animal shew any disposition to a reproduction of the disease after she has been once cured, she should be carefully fed and tended, and fattened for slaughter as speedily as possible.

If the malady evidently originates in weakness of the digestion, suppression of milk, incomplete formation of the blood, an acid state of the humours, general weakness of the whole frame, and of the bony system in particular, the best medicines to be given are those which are termed bitters and aromatics. They are, in fact, the only things that do good; and if accompanied by strict attention to cleanliness and ventilation, and the animals are regularly exercised in the open air, and rubbed down or brushed all over every day, and a moderate quantity of salt is mingled with their food or drink, the result will usually be favourable. Considerable care should be extended to those animals which appear to be in good condition; they should have dry and nourishing food, and every thing which would tend to loosen or weaken the bowels should be carefully avoided.

I agree with Herr Brunck, that the only way to eradicate this malady, is to build new cow-houses in more healthy situations—to pay great attention to cleanliness and ventilation—to allow the animals exercise in the open air every day that the weather will permit—and to do away with the present system of feeding, and give only dry nourishing food and pure cold water.

A great advantage would be derived in large farms from a well or spring being contrived in the neighbourhood of the dairy, and the cows being allowed daily access to it, and enjoyment of exercise in the open air.

There have been more quack medicines recommended as certain cures for fragility of the bones than for any other disease; and, in spite of their vaunted infallibility, they all fail. The quack fills his purse, and the poor farmer loses his money and his cattle. It is much to be lamented that the law has no power to punish these impostors.

*Magazin für die gesammte Thierheilkunde*, 1838, p. 329.



## CAPPED HOCKS.

[On looking over my portfolio, I find a letter, of which the following is the substance. It is from a surgeon in a large market town, of much experience and of deserved reputation in his own profession. We beg him to forgive our apparent but undesigned neglect; and as to the matter in dispute, we are content to leave it altogether to the decision of our veterinary friends.—Y.]

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IN the 10th No. of the Farmer's Series of the Library of Useful Knowledge, in page 273 it is remarked, *inter alia*, when treating of "capped hocks," that "puncturing the tumour, &c. would be a most injudicious and dangerous practice." About seven or eight years ago, I had a horse which had this enlargement of his hocks to a very considerable degree, and, after many fruitless inquiries as to the best mode of treatment, I determined to proceed upon the same principles as I would with an encysted tumour in the human subject, where I could not with safety remove it by the knife; i. e. to empty it of its contents, and to endeavour to produce adhesive inflammation within the cavity of the tumour. For this purpose I plunged an hydrocele trocar into the sac upon each hock, and evacuated about two or three ounces of a viscid fluid, nearly of the consistence of the albumen of the egg; after which I immediately put the horse between the shafts of a gig, and drove him ten or twelve miles without stopping, by which I brought on that very inflammation which I wished for, and that to a very moderate degree. The result was perfectly satisfactory in every respect. I used the horse for three or four years afterwards; and it was only upon a very minute inspection that any remains of the affection could be discovered, which was merely a slight thickening of the coats of the sac.

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## THE ROMNEY MARSH SHEEP.

[We have to thank an anonymous correspondent for the following correction of the account of this breed, in the work entitled "Sheep." This work, we have reason to know, is in the hands of the greater part of our readers; and as our object and theirs is truth, we do not for a moment hesitate to insert this account from a practical man, and an inhabitant of the marsh.—Y.]

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THE description of this breed is pretty correct; but, generally speaking, a two-yearling wether, after it is shorn, will weigh from twelve to fifteen stone (of eight pounds), and, taking the price at

four shillings per stone, will make a wether of fifteen stone sell at £3. Two-year-old sheep generally shear from seven to nine pounds of wool, which is long, and pretty soft, and most of it finds its way to France. The present price is about £16 per pack. Lambs' wool about 1s. per lb. Tags, that is, young wether sheep a year and a half old, are sometimes fattened and sold about November, and will weigh ten stone and upwards. It is not customary to put fattening sheep and tags together, as you state; but good fattening land will carry about eight sheep to the acre. All, however, depends upon the season; and if there is a good bite, many graziers take in beasts belonging to their lamb-keepers, whose interest it is to keep the lambs pretty well upon the uplands during the winter, for it is impossible to keep the lambs during the winter on the marshes. Good tags are selling at 25s. to 30s. The tags are kept in a pretty good field. They are laid about seven to ten per acre.

The marsh is certainly very cold when a north-east wind blows; but I do not think that the lambs are quite so badly off as you describe. No doubt, at all times lambs will die, and it is very possible that many of them might be saved by shelter and attention; but this year (1838) the fall has been very considerable—more singles than twins. On last Romney Lamb Fair, 21st August, lambs sold very cheap, from 12s. to 18s. Most all the farmers for many miles around the marsh ride with the true Romney Marsh rams: the hire is from £2.2s. to £10.10s. per month.

The ewes are distinguished as one-lamb ewes, two-lamb ewes, three-lamb ewes, when they are full-mouthed and turned off for the butcher.

## OLD RECORDS OF CANINE PATHOLOGY.

*By W. Y.*

### SWALLOWING INDIGESTIBLE SUBSTANCES.

1817, *July 24th*.—Mr. D. had a spaniel, naturally lively, and sometimes almost annoyingly so; but he could now scarcely be induced to move. He quite refused his food. Some sulphur had been given by the owner, which had produced sickness, the bowels remaining constipated. An aloetic pill was administered.

25th.—The medicine had again returned by vomit, and the bowels had not been moved. The dog did not evince any great degree of pain, except when the belly was pressed upon. He then shrunk, and even cried; otherwise he lay stupidly, scarcely looking up when spoken to. An injection of thin gruel with castor oil was administered, and two drachms of castor oil and one of syrup

of buckthorn administered by the mouth. It was rejected in half an hour, and the dog began to exhibit symptoms of greater pain.

As the day passed on he became restless, and howled sadly. The medicine was repeated, with half a drachm of the syrup of white poppies. He died in the night.

On opening him in the following morning, a peach-stone was found half way along the ileum. The portion of intestine through which it had passed was violently inflamed, and a singular spasmodic contraction pervaded the whole of the small intestine through which the foreign body had yet to find its way.

It was supposed that the stone had been swallowed on the 22d. An apricot stone was in the stomach.

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1820. *April 23.*—A Newfoundland dog, belonging to Mr. Nowell, of Wimpole Street, had always had a strange propensity to swallow stones, ropes, and all kinds of indigesta. Yesterday morning he vomited several stones, and, to-day, much limpid fluid, with a considerable quantity of gravel. I gave him my usual emetic—equal quantities of calomel and emetic tartar. He had four grains of the compound powder. It did its duty, but no more of these foreign substances were ejected from the mouth. He, however, in the course of the night passed three stones by stool, one of them weighing more than two ounces. After this he seemed to be well.

*August 8th.*—He is very ill. He has frequent vomiting—his belly is strangely tucked up, and hard and cordy. Give four drachms of the aperient mixture—four parts of castor oil, two of syrup of buckthorn, and one of syrup of white poppies—every six hours.

The medicine is rejected almost as soon as swallowed. Three drops of croton oil in a little oil of olives caused most violent sickness; soon after which the animal died. A stone, of the form of a common pebble, and weighing nearly four ounces, was found in the ileum, and was the evident cause of death.

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1821. *March.*—A terrier, belonging to Mr. Dewberry, of Conduit Street, refused to eat. It panted, vomited, and laboured under constipation which nothing could remove. He died, and a piece of cork—the half of a common wine-bottle cork—was found in the ileum.

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1823. *Aug.*—A large Blenheim spaniel, belonging to Mrs. Winstanley, swallowed a shilling. An emetic was given in less than half an hour. Plenty of food was regurgitated, but no coin.

He was then kept under the influence of the aperient medicine for a week, but with no avail.

The dog was frequently attacked with a fit of vomiting, and especially soon after a meal. Scarcely a day passed without sickness, and he grew dull and thin. Four or five months elapsed, and then he began to rally, and assumed his former habits and appearance, with the exception of occasional fits of sickness, almost every fortnight or three weeks.

*Feb. 3d, 1827.*—One of its usual fits of vomiting occurred, and the lost shilling made its appearance. It was perfectly blackened, but not in the least eroded or altered in form.

From that time the sickness entirely ceased; and I occasionally saw him for two or three years afterwards, in the best health and condition.

## COMPTE RENDU OF THE TRANSACTIONS OF THE ROYAL VETERINARY SCHOOL AT LYONS, DURING THE SCHOLASTIC YEAR 1837-8.

WE have received into the hospital, from the 1st of August, 1837, to the same day in the year 1838, 1216 animals; besides which there have been brought more than 6000 for consultation, or to be operated upon or attended to, on account of certain wounds or accidents. In our detail of some of these cases we will be guided in our selection either by their rarity or complication, or because they illustrate the progress of certain divisions of our science, or present certain facts analogous to those which are observed in the practice of human medicine. We can refer to these analogies without fear, for all the branches of the healing art approximate to each other. In our opinion, the sciences of human and veterinary medicine are only parts of one great whole, separated only as the physiology of man differs from that of the brute. The same general laws govern, to a greater or less degree, every species of organization, from the most simple to the most complicated. All are comprehended under one general term, the biology or science of life.

That which is true of life is equally applicable to disease. If there are constant laws to govern the ordinary state of the different functions, it is the same with the extraordinary phenomena which constitute the science of pathology. The various diseases, irregular as they seem to be, are all governed by certain laws—laws as definite as those which belong to physiology and to health.

Veterinary science may be considered as introductory to human medicine. We cultivate the same field,—life. Ours are sister-



sciences, and it is only in the moment of imbecility or mental infirmity that an attempt has been made to separate the one from the other. The only legitimate distinction between them is, that the patient of the one is far superior to that of the other in the duties of the present scene and his future destination. It is not impossible that, at some future period, it will again be as it was in the early times of medical science, the medical attendant of the human being will be consulted with regard to the ailments of the brute.

A case which occurred in our hospital may, perhaps, have contributed to suggest to us the line of thought which we have now pursued. About the same time that M. Bonnet removed a tumour, weighing fourteen pounds, from one of his patients, we were called upon to extirpate one of fifty pounds that had grown on the neck of a mule.

The form and disposition of this enlargement on the neck of the mule was very remarkable. It was composed of three parts of unequal volume. The first, and the most voluminous, hung down on the right side, and reached below the inferior border of that division of the upper part of the neck : it was a foot and a half in length, and measured two feet at its base. The second tumour was smaller. It was nine inches in height, and only seventeen inches in circumference : it hung from the left side of the neck, and reached to the border of the lower jaw. The third was the smallest of the whole : it grew between the other two, and was not above six inches in height or circumference.

It would be imagined that such a tumour would very much annoy the animal, and would prevent it from executing its ordinary work. His pace was slow, and he did exhibit some degree of embarrassment. He carried his head unusually low. The blood in the jugular vein, impeded in its course, had distended the parietes of the vessel, and produced several varicose portions, and its stagnation in the vein produced a kind of permanent cerebral congestion.

A tumour on the same place had been removed by us eight years previously, and when it was far less voluminous than the present : it had, however, been reproduced with very great rapidity. On carefully examining it, the existence of various lobular masses was ascertained, of different sizes, rather dense, separated by condensed laminæ of cellular tissue, and the whole provided with a strong pedicle. The integument was sound, and the hair had the same appearance as on other parts of the body.

The proprietor of the animal having been made aware of the danger of extirpating so great a mass, we consented to operate on the animal, for he had now become incapable of work. We determined to operate by tying the jugular vein as near to the head

as we could; for it had become varicose, and hæmorrhage from it would have been annoying and dangerous. We next determined to surround the principal tumours with two semi-elliptical incisions—to operate on that at the summit by means of a crucial incision, not preserving more of the skin than was necessary to cover the subjacent parts—to leave the near-side tumour to be operated upon at the close of the business, because it would be necessary to turn the animal, and to place him in a painful position—to secure the vessels as they presented themselves, which would retard the operation, but render it more sure; and, finally, not to touch the pedicle until we had fairly detached the tumour all round—to secure the vessels at the base in several fasciculi, and to enclose nothing in the same ligature with the pedicle.

The operation was quickly performed, without any thing particular occurring—the borders of the wound were brought together by several distinct ligatures—an appropriate bandage applied, and the mule conducted again to his stable—well littered down—all food put out of the way for some hours, and a careful attendant left with him.

In the meantime we were occupied in weighing and examining the tumours. They weighed more than 50 pounds. They were covered by the subcutaneous muscle of the neck, presenting at certain points a muscular, and at others a fibrous aspect. Below, the cellular tissue had acquired great firmness; it creaked under the scalpel, and buried itself deeply between the lobes of the tumour, furnishing a complete envelope for it. The tumours consisted of an encephaloid mass in its last stage of growth: it was a greyish white substance, very dense, and likewise creaking when pressed upon. It was penetrated by numerous bloodvessels. The interlobular cellular envelopes were studded in some places with hydatids, varying in size from that of a pea to a pullet's egg, and from which a fluid plentifully escaped during the operation—in other parts was a semi-fluid substance, yellow, unctuous, and which communicated a stain like grease to paper—finally, there were numerous reservoirs filled with a dirty-coloured fluid, lightly stained with red.

Soon after the operation, the fever of reaction began to develop itself, and considerable inflammation surrounded the wound—the appetite, however, was unaffected. We endeavoured to meet this state of the system by giving a sufficient quantity of food to preserve a certain degree of energy without overloading the system; but, in despite of all our attention (and it was unremitted), on the eighth day, and when an abundant secretion of greyish-coloured pus had taken place, the strength of the animal began to be exhausted, although none of his senses seemed to be affected. The pus diminished in quantity, and assumed a serous character. Serous

infiltrations were formed around the wounds, under the belly, and in the sheath; the pulse lost its firmness, and became accelerated; the respiration was likewise quickened and laborious, and little hope remained. We gave our patient bitter tonics—we punctured the infiltrated parts, and bathed them with warm aromatic infusions. On the morrow he laid himself down, he languidly looked around him for food; his various senses seemed gradually to fail, and he died.

Two or three other surgical cases must be recorded here, on account of the difficult diagnosis which they presented during life, and the impossibility of explaining some of the lesions which were observed after death.

A post-horse, that had been treated eight or nine months for farcy by an empiric, presented on his croup, the inside of his left thigh, and on both sides of the chest, numerous fistulous ulcers. They were laid fairly open, and cauterized lightly, but to the bottom, with the red-hot iron. The horse, until now, although very poor, seemed to suffer little pain—his appetite had been good, and his breathing regular; but three days after this he began to breathe with difficulty—his pulse was small and concentrated—he became suddenly weak, and his belly was distended, and he seemed to have colicky pains. On account of the extensive ulceration of the integument, little could be gained by auscultation; but on comparing the various symptoms, we suspected pleurisy, complicated with indigestion. We effected a copious bleeding—we inserted setons in the chest—we gave laxative medicines, and had recourse to injections; but, a few hours afterwards, the horse died.

He was opened an hour after death, and the following lesions were found:—an effusion of blood, to the amount of eight quarts, in the peritoneum, liquid in some places, and coagulated in the duplicatures of the mesentery. On the right lobe of the liver was a bloody tumour, three inches thick, covered by the peritoneum, and composed of layers, the exterior ones being red, and the inner ones white, and adherent to the substance of the liver, which was granulated, porous, and very friable.

The left lobe, on the contrary, was indurated, and its borders retracted and approaching to each other, so as to form a kind of cup. There was nothing unusual in the chest; but the posterior ribs, from the eighth to the eighteenth, presented, at the points corresponding with the exterior ulcers, a degree of softening—*ostéomaloxie*. A hollow in the centre contained the same kind of greyish matter, from which proceeded the fungous excrescences of the ulcers. The same lesions were observed on the ribs of both sides. Almost all the ribs on the left side broke in the centre in the attempt to disarticulate them.



A large draught horse, that had been accustomed to kick at the other horses, fell on his right side, and received, a little above the external thoracic vein, a penetrating wound, that was accompanied by some singular complications. On the first view of it, there appeared a wound three inches in diameter, and the bottom of which could not be reached with the finger. He seemed to be in great pain—the pulse was hard and quick—the respiration difficult and painful, and the appetite gone. In order to arrest the flow of blood, a tent was placed in the wound, and confined by a proper bandage. A bleeding to the extent of five pounds was effected, and the food restricted to mashes and gruel.

On the morrow, the general symptoms were aggravated; blood continued to exude from the wound—the resonance had almost ceased on the right side of the chest, and the respiration was feeble and slow. We suspected a fracture of the rib, and anticipated an attack of pleurisy. A new bleeding of five pounds was effected, emollient lotions were applied to the part, and injections were administered. The horse refused all food.

On the third day the dyspnœa was very considerable, and the horse was evidently suffering much pain. A third bleeding was ordered, and the edges of the wound were scarified. The horse refused all solids and fluids, and shivering fits came on. Setons were inserted in the thighs.

On the fourth day the patient was considerably debilitated. The pulse was small and feeble—the respiration difficult—the inspiration more perfect than the expiration—an evident gurgling could be heard in the chest—the sensibility of the skin was much diminished, and cold sweats covered the body. A blister was placed on the chest, but it did not rise. On the morrow, the horse suddenly fell on his right side, and died a short time afterwards.

He was opened half an hour after death. The first short rib was fractured towards its lower extremity. The superior fragment was depressed into the chest, and terminated in a sharp point an inch in length. The pleura was thickened to a level with the fracture by an accumulation of false membranes several inches around. The pulmonary pleura was covered with albuminous granulations, and the bottom of the cavity contained about two quarts of blood. In exploring the abdominal cavity, it was found that the right lobe of the liver had on its convex surface a kind of abscess containing concrete pus. It adhered to the diaphragm at that point. The abscess being opened, presented a wound half an inch in depth, corresponding with a similar wound in the diaphragm, and still larger on the side of the chest; and on pressing on the extremity of the fractured rib, it was easy to perceive that the wound in the diaphragm exactly corresponded with the form of



the bone. There consequently remained no doubt that in the violence which produced the fracture the pointed fragment of the rib was the cause of all the mischief which the post-mortem examination discovered.

A draught mare, employed in agricultural work, six years old, and that had never had a foal, had a carcinomatous enlargement at the inferior commissure of the vulva. It had been observed during the two years that the farmer had possessed her. It was dangerous to apply any means of cure, on account of her habit of kicking. Some attempts had, however, been made to remove the nuisance, but the occasional contact of the hairs of the tail with the diseased parts, and the irritation of the urine, and more particularly of the pungent remedies that had been employed in the hope of remedying the evil, had produced an inflammation which increased the mischief, and hastened the growth of the tumour.

She was first brought to us about eighteen months ago. The tumour measured then about two inches in every direction, and was ulcerated in several parts. The borders of the ulcers were indurated, irregular, grey, and covered with a squamous crust, and a kind of grey fœtid ichor ran from them. Proper attention, and some opiate lotions, seemed to arrest, for a certain time, the progress of the evil; but on her second visit, six months afterwards, the enlargement occupied two-thirds, at least, of the labia of the vulva. It had assumed the consistence of a scirrhus tissue through the greater part of its extent—tubercles shewed themselves distinctly around it, and especially around the ulcers, and, on full consideration, we determined to remove the portions, the structure of which had undergone the greatest change. The patient was, some days afterwards, capable of resuming her labour, and retained her appetite, condition, and strength.

*February 19, 1838.*—In order to check the progress of this morbid growth, we were compelled to excise, at least, two-thirds of the labia of the vulva, and a portion of the bulb of the ureter. The mammary glands had now also very much increased in size, and become scirrhus. We did not dare to attack them with the knife, and frictions both with mercury and with iodine had no effect. The discharge of purulent, serous, and fœtid matter was now very abundant, the appetite began to fail, she became thinner every day, and infiltrations of fluid began to appear on her hind limbs and under the belly. It was evident that the disease was assuming a cancerous character, and we determined to destroy her.

On inspection of the carcass, the mucous membrane of the vagina presented a very deep red hue, and an evident diminution in its consistence, almost to the neck of the uterus. An incision into it discovered a lardaceous tissue, studded with tubercles, and a

yellow-coloured infiltration in the subjacent cellular layers. This infiltration extended to the inside of the thighs, and under the belly. The mammillary glands were only in the first stage of scirrhus degeneracy. The abdominal and thoracic viscera were healthy.

This fact establishes the occasional existence of a cancerous affection, remaining for a long time altogether local; bounded by the parietes of the vagina, and only extending to the mammæ in its last stage.

Although these are cases in which the patients have sunk under the influence of the disease, and our medical treatment has been insufficient, we have not feared to publish them, being convinced that the record of a failure often leads to the most unexpected and valuable discoveries.

We have conducted certain experiments at the instigation of M. Bonnet, surgeon-in-chief at the Hôtel Dieu at Lyons, with a view to ascertain whether the hæmorrhages which occur in the first days after amputation, and which are so often followed by the death of the patient, derive their danger from the simple loss of blood, or from the moral impression which the amputation ordinarily makes. He amputated the leg of two dogs at the same time, leaving the blood to flow from the wound of one of them to the amount of six ounces, which is the maximum in bleeding this animal\*: from the other, one or two ounces alone were subtracted during the operation, and two venous bleedings of an ounce each were made, with an interval of three hours between them, and on the following day three other bleedings, to the same extent, and with the same interval of time.

In the first dog the wound healed rapidly by the first intention, as is usual in the dog; but the second was very much dispirited during the two or three first days, and there was a cold skin and small pulse. These symptoms, however, gradually disappeared, and the wound healed in a little longer time than in the first case.

The same experiment was repeated on two other dogs, and with the same results.

Inflammation of the viscera of the chest were of frequent occurrence in the spring and summer of this year. Our treatment has had a very satisfactory result. The veterinary surgeon has, within the few last years, made himself far better acquainted than he used to be with the existence and character of diseases of the chest. We refer to the adoption of percussion

\* I have often taken ten and twelve ounces from a dog of middle size, and have abstracted, and with good effect, sixteen and eighteen ounces from a Newfoundland dog. In cases of acute inflammation, six ounces would very rarely have satisfied me.—Y.

and auscultation. Many old practitioners have eagerly adopted the means by which they may more directly and surely arrive at a correct knowledge of disease. It is true that, by the dilatation and contraction, the frequency or the slowness of the movements of the nostrils and the parietes of the chest—by pressure exercised on the intercostal region—by the character of the cough, and by the position in which the patient instinctively places himself, the practitioner is enabled to detect an abnormal state of the respiratory function, and in some cases the particular lesion; but, nevertheless, by accustoming himself to listen to the different sounds which may be heard within the tracheal tube and the walls of the chest, he can much more readily and surely distinguish the organ that suffers and the kind of lesion, and even the particular portion of the organ that is diseased. Auscultation and percussion are exceedingly valuable in assisting us to form not only a sure diagnosis, but, in many cases, a prognosis almost as certain; and the latter circumstance is most intimately connected with the reputation of the surgeon. We would, therefore, recommend to the younger practitioners the most careful study of these valuable modes of exploring the chest.

GLANDERS, dependent, in a great measure, on the vicissitudes of the weather that have characterized this session, as well as on other causes, has been very prevalent in the establishments of many of the post-masters and proprietors of diligences in Lyons.

We have made few or no advances towards the radical cure of this malady. We have seen it commence in its acute state in two asses, with the characters of *laryngo-tracheitis*, and accompanied by a loud laryngeal sound. Bleeding from the jugular, and a vesicatory placed under the throat, have caused the respiratory sound to cease; but, seven days afterwards, ulceration of the pituitary membrane has followed, and hoarseness referrible to the nasal passages, and difficulty of respiration, and death.

One of these animals had acute glanders and farcy, a complication very rare in this monodactyle. An ass that was placed in the same stable as the two of which mention has just been made, became glandered in six weeks, and died.

In the course of this year we have several times observed a phlegmonous tumour, of which, in the situation that it occupied, little mention has been made. We call it *massétérien*. It is evidently accompanied by very considerable pain, by trismus, or great difficulty in the prehension and mastication of the food. It does not suppurate until twelve or fifteen days, and, during that time, the patient is rapidly losing condition, on account of the difficulty or impossibility of mastication. Although the masseter muscle becomes protuberant when the pus is collecting beneath it, the fluc-



tuation is always obscure, and it requires some degree of courage to pierce through the fleshy mass, in order to arrive at the reservoir beneath. After the evacuation of the pus, the index finger may traverse a very large space, bounded at the bottom by the periosteum. We may reckon that from that moment the jaw will recover a little of its natural motion; the animal will more readily take his food, and, by degrees, recover his condition, and return to his work. The drivers of these animals trace this phlegmon to the blows which they occasionally receive on the cheek. May not exposure to rain, and cold and humid air, be at least occasional causes of it?

A horse, from an old stallion and a mare farcied and glandered to the utmost degree, and who has passed six years at our school among all the glandered and farcied horses that came to us, had no ailment during the first five years; but now has some farcy tumours on the neck. At three years old he had ophthalmia, and became blind in one eye. The other eye was, soon afterwards, affected, and has had numerous periodical attacks. It, at length, became totally blind, and (fye!) was sold for fifty francs.

#### ANATOMY.

We have continued our researches on the appendices of the fœtus, and have especially studied the umbilical vesicle in the solipede. This organ, which we found in the fœtus of an ass three months advanced in gestation, was situated in a species of infundibulum between the base of the chorion and the chorial expansion of the allantois. It was of an elongated pear-like form, the base of which adhered to the chorion, forming a species of matrix. At the point it was prolonged towards the fœtus, and terminated insensibly some lines between the amnios and the amniotic membrane of the allantois, without any communication with the intestine. It received, towards its extremity, two omphelo-mesenteric vessels, which entered and ramified through its walls, almost completely vascular.

In this fœtus, the adherent point of the chorion presented, in its centre, an opening with fringed and green borders, and which formed a communication between the cavity of the vesicle and the internal membrane of the uterus. There was not any fluid in the vesicle.

In the fœtus of seven or eight months utero-gestation in a mare, we found the same organ in a similar position; but the interior cavity had disappeared, and the vesicle formed nothing more than a cord, very vascular, adhering, through its whole length, to one of the sides of the infundibulum, and, by its most external extremity, united to the chorion by a kind of cicatrix, less apparent than in a younger fœtus, and without any opening.



This continuance of the vesicle until a very advanced period in the solipede—until parturition in the carnivora—and the great vascularity of its parietes, have made us think that the organ has other uses, as yet unknown, beside those which are generally attributed to it.

On the portion of the second sac, which bordered on the cord, and near the infundibulum which forms the urachus in order to terminate by the allantois, we have observed a vascular plexus, of the form of a bird's foot, between the branches of which the sac has more opaque parietes than in the rest of its extent. Dissection has proved that this opacity was produced by a peculiar membranous pouch, completely empty, and placed between the amnios and the amniotic membrane of the allantois, from which it is easily detached. The ombilical vesicle terminates near this membranous pouch, and at this point, also, the amnios forms a little conical cul-de-sac against the cord. We will endeavour to discover what is the intention of this pouch, which we had never before observed.

M. Mollard, veterinary surgeon at La Tour du Pin, has sent to us the foetus of a goat, found by the butcher in the abdominal cavity. The uterus was whole, and without any traces of gestation. M. Mollard saw the foetus fixed near the umbilical region by some very short vessels and ligaments. It was surrounded and strongly compressed by an envelope, having much analogy to the epiploon, and adherent to the skin through its whole extent.

#### CHEMISTRY.

The pump which supplies the hospital with water, undergoing some repairs, there was found on the inside of the copper pipes of which it was formed, layers, two lines in thickness, of a salt, which the colour announced to have copper as its basis. The horses in the hospital having often had fits of spontaneous colic, and even defluxions from the chest, which we had been accustomed to attribute to the coldness of the water of that pump, given in the morning on an empty stomach, we determined to examine whether these depositions were the cause of these accidents. The result of our researches was,

1. That these salts are formed of oxide and carbonate of copper.
2. That they are completely insoluble in cold water.
3. That no re-agent determines the existence of these salts in the water in which they have been immersed more than twenty days.
4. That of the animals which, for more than a month, have drunk of the water in which this oxide and carbonate of copper have been placed, none have experienced the slightest derangement of health.

## EXTERNAL PRACTICE.

Our pupils have not been confined to the observation of the horses that have been daily brought to the infirmary, but have been required to attend upon a great number of patients, whether in the city or in the neighbouring districts of this department or those of l'Isere and l'Ain. Although the diseases of cattle, sheep, goats, &c., generally considered, are nearly the same as those of the horse, they present many points of difference in their causes, symptoms, and termination. How can it be otherwise, considering how widely these animals differ from the horse in their organization, their degree of susceptibility, appetites, habitudes, and many other circumstances. The diagnosis of their maladies consequently demands a certain degree of experience, and considerable practical study. A skin thicker—sensibility more obtuse—senses less active—intelligence much more limited—motion slower—their external diseases less appreciable by the touch—those of the internal organs more obscure, both as it regards their first and principal seat, and their various sympathies. If the general diagnosis of the ordinary maladies of ruminants is more difficult to be understood than in the horse, it is still more difficult with regard to diseases that are associated with little pain, and that slowly run their course. These visits, then, of the pupils in the environs of Lyons, and to animals of every description, are exceedingly useful. They are beginning that practice which is to become the business of their lives—they are putting to the test the lessons of their professors; and in cases of difficulty they have access to their instructors, who will confirm them in their right views of things, and check every erroneous impression and practice.

*Rec. de Méd. Vet. Nov. 1838.*

## THE VETERINARIAN, MARCH 1, 1839.

*Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.*

No conference, we believe, has yet taken place between the Governors of the Royal Veterinary College and the Directors of the English Agricultural Society; but only a short space of time can now elapse before the primary arrangement will take place. The precise nature of that arrangement we profess not to know; but it will be worthy of the honourable men who will meet in consulta-

tion—it will be worthy of the Agricultural Society and of the Veterinary School. While no existing interests will be compromised—but far the contrary—those preliminary steps will, doubtless, be taken which will secure the full accomplishment of the noble objects so important to both parties.

There, surely, will be no objection,—there can be no well-founded one—to the completion of the original but too long neglected purposes of the veterinary school, and which would be so welcome and advantageous to every one connected with the agriculture of the country. We anticipate but one opponent; and the ground of his opposition, whether arising from misconception or prejudice, or dislike or fear, we never could understand. Neither his lectures, nor the honorarium which accompanies them, is in the slightest degree interfered with or at hazard; while his colleagues have expressed their approbation of the proposed extension of veterinary instruction, and the demonstrator, highly to his honour, is already working on the plan. No opposition will now be of avail; and by far the most prudent measure would be to make a merit of granting that which can no longer be refused.

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A subject not a little connected with our art, and promising to be of incalculable advantage to agricultural men, is now beginning to excite considerable attention—we mean the establishment of agricultural colleges or schools for the sons of farmers, and, we will add, for the sons of veterinary surgeons too; for, at such institutions, properly conducted, they would obtain the education which would best prepare them for the successful study of their profession at the College, and for their well-doing in future life.

One of these schools has been established nearly twenty years at Templemoyle, in Ireland. The farm attached to it consists of 169 statute acres. It was founded in the year 1827, in connexion with, and strongly supported by, the North-West of Ireland Society—the plan of M. Fellenberg, at Hofwyl, in Switzerland, being taken, in some degree, as a model. The grand object of the school is, to make the boys good practical farmers. They are divided into two sections, each of which is alternately employed in manual labour on the farm. They plough, they sow, they reap, and manure, and

every labour of the farm is performed under the superintendence of the head farmer, or of a monitor. Each one is occasionally employed at different ploughs, and is taught how to settle the plough-irons for every soil and work. He is also made practically acquainted with the use and management of every implement used in husbandry. He is not designed always to follow the plough or to harrow; but he is prepared, by his own experience, to perceive, at a glance, whether the work upon his own farm is well or ill done.

The soil is mostly a thin retentive clay, on a micacious subsoil, and yielding but small produce compared with the labour and skill bestowed upon it. These circumstances occasion a greater expense than if the soil had been more grateful in its returns; but every field now affords a practical lesson as to the mode of draining and manuring adopted, and their influence on the crops that have succeeded.

A nursery of forest trees has now sprung up, and partially engage the care and attention of the pupils.

The garden, which is both useful and ornamental, will by its system and neatness afford some valuable lessons, and induce the pupils hereafter to adopt, from principle, a neater, and more creditable, and more profitable management than is often seen in this interesting portion of the farmer's establishment.

A sufficient number of stock, of different breeds, are kept on the farm, which give occasion for many practical lectures on this material division of the farmer's property. Here science and practice will beneficially unite, and the pupil will never forget the illustrations he has had of the points of a good or a bad—a hardy or a delicate—a profitable or an unthrifty breed; and the means by which the good qualities may be preserved or increased and the indifferent ones neutralized or changed. The whole routine of grazing and of stall-feeding—of the manufacture of butter and of cheese, and of the most successful management of sheep and of pigs, will be experimentally taught.

Could not all this be learned at home? No! The youth cannot forget that he is at home, and therefore he is not so diligent or so systematic in his studies; nor will the father superintend, or,



perhaps, can he, so closely and so profitably as he ought, either the theoretical or the practical portion of the youngster's education.

We have described the proceedings out of doors. Another portion of the day is devoted to other pursuits. Under the care of other masters, the pupil is taught writing, arithmetic, grammar, book-keeping, as applicable not only to agricultural but to commercial pursuits. To these succeed geometry, algebra, trigonometry, as applicable to land-surveying, and that may be usefully employed hereafter on his own farm. He is taught to plan and to map the different portions of the farm. They are instructed in the system of rotation on the farm of the College, and on other farms with a different super or substratum, and with different species of manure at hand. This will branch out into a regular course of instruction on the theory and practice of agriculture, and the reason for adopting any particular crop or rotation of crops, with the most suitable soil, and the most approved mode of cultivation for each. The proper treatment and management of working, feeding, and dairy stock will be here resumed, and more systematically considered—the principles of breeding, and the adaptation of the different breeds to different situations and soils. To this will follow, the best means of draining and improving land—the most recent inventions as it regards the various agricultural improvements, and the respective merits of each.

To these were added, at Templemoyle, the occasional attendance of a veterinary surgeon, who gave a course of lectures on the food and the treatment of the horse under the different uses to which he was applied, and the most approved method of shoeing.

Establishments of this kind cannot fail of being in the highest degree useful, and we have no doubt will, at no great distance of time, be established in various parts of the united kingdom. One of them is now locating in Kent, under the able assistance of Mr. Duppa, and supported by the principal agriculturists of that county. We wish it the success that it deserves. Mr. Duppa is very sanguine with regard to it. If the instruction which is imparted bears directly on the future business of the pupil—if the point to which it is carried is determined by the degree in which it can be rendered practically useful, and, with this bear-

ing, if no department of agricultural knowledge is neglected, the best results must inevitably follow.

One paragraph we cannot refrain from quoting at length from Mr. Duppa. "Besides knowledge, skill in various mechanical arts ought also to be acquired. Although it may not be necessary for the farmer in after-life to make use of his own hands as a carpenter or a smith, yet for the purpose of forming a just estimate of the character of the work done for him he must have some skill in these matters. A person having such skill will never submit to slovenly carpentering, and his horses will never be lamed by a clumsy and ignorant smith. Many a long winter's evening, which he now spends in sleeping by the fireside, will then be profitably occupied, and fences and buildings which a few nails would preserve will not so often be seen falling into ruins. The isolated situation in which many farmers live, makes it necessary that they should themselves have skill in many things. Besides, there is a positive pleasure in seeing the neatness and efficiency of a place supported by, or contributed to, by one's own handy-work. Added to this, the fact of farmers being well acquainted with the manner in which work of the above description ought to be done, would operate directly on the persons engaged in these employments.

"The young farmer will be able to perform with his own hands all the operations of husbandry—he will be a handy, active, skilful person. He should be able to take the shafts of the plough from the ploughman, and say, 'This is the way to do it:' and if he himself can perform, and has performed, a good day's work, he will know what a day's work means, and not allow himself to be plundered by idlers."

The annual expense of an education like this, the earnings and labour of the pupils being taken into consideration, Mr. Duppa calculates at about £25 per annum; and the necessary outlay for the purchase of eight or ten acres of land, and the erection and fitting up, &c. of suitable buildings, adjoining the property of some nobleman or gentleman, who would let to them 250 or 300 or more acres of land on a long lease, he estimates at about £10,000, which he would raise by shares of £25 each, as a loan, upon which interest should be paid.

To the ordinary pupils of such an establishment might be added a certain number of older, or superior pupils, who might be more thoroughly instructed in chemistry, and in every science connected with agriculture, with the knowledge of the French and German languages. The cost of their education might be £35 or £40 per annum.

We have stated, at this length, the plan of this gentleman, not merely as that which, being once established, could not fail of succeeding, and would be one of the greatest blessings that could be bestowed on the children of the farmer, but because two or three years' residence in such a school would be of inestimable advantage to him whose ultimate views are directed to the practice of the veterinary art. The evil attending a very considerable proportion of veterinary pupils when they arrive at the College is their almost total ignorance connected with and illustrative of their profession. The public is now beginning to expect from them an appearance and acquirements far superior to what would enable them to pass decently through life only a few years ago. They mingle with medical men—in the courtesies of life they are placed almost on a level with them. How degrading, how galling, for many a little false pronunciation to be continually revealing their inferiority of education! A competent knowledge of, at least, the Latin language exerts an influence on the conversation, the manner of expression, the mode of thought, the whole mental character of the youth, almost incredible. The common intercourse of society, and especially the progress of science, render some acquaintance with French literature highly useful to the veterinary pupil. But, more than all, and the importance of which cannot be too highly estimated, is the knowledge which the youth would acquire of the minutest particulars of the breed, and growth, and food, and treatment, and management, and dangers, and worth, of every patient that would in after-life be submitted to his care. Where is the well-known difference between the evident relief which we look to experience, and do generally experience, from the attendance of the medical man who has been the friend of our family for years, and that of a stranger newly introduced? Why does disease so soon disappear under the care of the former, and the patient long remain in

a doubtful and dangerous state under the care, and the skilful care, of the latter? Why, the former knows all our habits, our idiosyncracies, our natural medicines, and our natural or acquired dangers. So would he who in such a school had lived among, and personally tended upon, in health and in disease, the cattle and sheep of the educational farm, and who had every circumstance of the peculiarities and their habits impressed upon his mind, come infinitely better prepared to the superior place of instruction in which he must afterwards reside, and more readily and thoroughly be prepared for the successful and honourable practice of his profession.

But we are intruding too far on the space allotted to our leading article.

Our friend, the talented Editor of the "Farmer's Magazine," will also begin to think that we are intruding a little too long and too far on his peculiar province. He will forgive us that. If, for the sake of the veterinary pupil, we are visiting the school which was primarily intended for the farmer, it is to bring him an increase of pupils, and to hasten that period when an honourable and beneficial union will be effected between us both.—Y.

## THE LAWS RELATING TO WARRANTY IN THE GERMANIC STATES.

*By M. J. IMLIN, of Strasbourg.*

[Continued from vol. xi, p. 488.]

### HESSE.

IN order to preserve the ancient usages in the different territories which now compose the Grand Duchy of Hesse, the regulations as to the warranty and sale of the horses, cattle, &c. are very unlike in various parts of it.

A. In Old Hesse the custom of the country and the written law, traced back as far as 1684, determine that the vender shall warrant the horse against MANGE, IMMOBILITY, STAGGERS, BROKEN-WIND, and that the animal has not been STOLEN. Cattle are warranted against CONSUMPTION, THE ROT, and EPILEPSY. As to sheep there is no warranty; and with regard to pigs the seller must return one-third of the price, if, before they are sent to the butcher, they become affected with MANGE or MEASLES.



B. In the province of Starkembourg, consisting of a part of the Palatinate, there exists an ordonnance of the 20th of March 1776 ; according to which, the seller warrants the horse against MANGE, EPILEPSY, BROKEN-WIND, IMMOBILITY, VERTIGO, FISTULA, and that the animal has not been STOLEN. Cattle are warranted against PHTHISIS, EPILEPSY, DROPSY, TURNSICK, CARIES OF THE JAW-BONES, and their having been STOLEN.

C. The ordonnances in force at Erbach are the same as in the Palatinate, as it regards horses, but in cattle they extend to PHTHISIS, CHRONIC CATARRH, VERTIGO, EPILEPSY, CARIES OF THE JAWS, and REDWATER.

D. At Isenbourg, the ordonnance is the same as just described with regard to the horse. It extends to STAGGERS, THE ROT, and PHTHISIS in cattle, but no mention is made of sheep or swine.

E. In the old territory of Solm and the Electorate of Mayence, the ancient usages of the different places are in force, and they differ in every place.

F. In the province of Hesse, on the Rhine, the civil code of Napoleon is observed, but still in conformity to the ancient usages of the respective places.

G. At Wimpfen, a city in the Grand Duchy of Hesse, enclosed by the territories of the King of Wurtembourg, the warranty extends, in the horse, to GLANDERS, FARCY, MANGE, GREASE, FOUNDER, BROKEN-WIND, PHTHISIS, IMMOBILITY, and RESTIVENESS. In cattle, to EPILEPSY, PHTHISIS, MANGE, FARCY, CARIES OF THE LOWER JAW, UMBILICAL FISTULA, and PUERPERAL FEVER. In pigs, it extends to DISEASE OF THE LUNGS, and to MEASLES ; and in sheep, to SCAB. The duration of the warranty is, for the horse, and in different places, *four weeks, four weeks and a day, and thirty days* ; for cattle, from *four weeks to three months* ; and for PHTHISIS from *four to six months*. For sheep there is not any time fixed.

#### PRUSSIA.

In the whole kingdom, with the exception of Rhenish Prussia, where the warranty is regulated by the code of Napoleon, the buying and selling of different animals is governed by the following regulations. When an animal becomes ill within *twenty-four hours* after delivery to the purchaser, it is presumed that the illness existed previous to such delivery. The purchaser is compelled, under the penalty of forfeiting this privilege, immediately to advertise the seller of the existence of such illness. In case of the absence of the seller, information must be given to the local authority, or to a veterinary surgeon. When an animal dies within the space of *twenty-four hours* after the sale, the loss must

fall on the seller, unless he can prove that the disease which was the cause of death arose from circumstances occurring posterior to the sale. When the disease develops itself more than *twenty-four hours* after the delivery, the loss must fall on the purchaser, unless he can prove that the malady existed before the delivery. When pigs within the space of *eight days* after the sale are attacked with MEASLES, it is presumed that the disease existed antecedent to the sale: the same is the case with SCAB in sheep, and PHTHISIS in cattle. This presumption holds equally good in the horse, as it respects RESTIVENESS *within four days*; GLANDERS, FARCY, and MANGE, *within fifteen days*; and BROKEN-WIND, AMAUROSIS, and OPTHALMIA, *within four weeks* after the delivery.

In many parts of Prussia the warranty extends to *four weeks* with respect to cattle, as it regards MANGE, ASTHMA, and COUGH, and *six weeks* with regard to PHTHISIS and ABSOLUTE REFUSAL OF FOOD. As to sheep, the warranty extends to *fifteen days*, as to the ROT, PHTHISIS, or TURNSICK; and, finally, in pigs to *fifteen days* for MEASLES, *three weeks* for PHTHISIS, and *four months* for SCAB.

#### SAXONY.

In Saxony there are no established laws with regard to traffic in cattle, except this, in force at Magdeburgh, may be considered one,—that a person who sells a horse to another with a warranty does warrant him against being RESTIVE, AMAUROTIC, STOLEN, or FOUNDERED. The purchaser bringing an action against the seller, has no chance of succeeding, unless he can prove, which he is seldom able to do, that the vice or unsoundness existed before the sale. It is on this ground that there are so few actions on the warranty of animals in this country. In the trial of these actions, the judges always propose certain questions to some professional men; but they have a right to decide, and occasionally do decide contrary to the opinion of these persons. The same custom exists in the Grand Duchy of Saxe-Weimar, in the Duchies of Saxe-Rottenbourg, Saxe-Cobourg, and Saxe-Meningen, and also in the principalities of Anhalt and Schwarzbourg; but in the Duchy of Saxe-Gotha there is an especial law on this subject.

#### SAXE GOTHA.

A law bearing date the 29th of March, 1790, and, perhaps, the most complete one of all those by which the commerce in horses is regulated, contains an enumeration of all the diseases which constitute unsoundness—the duration of the warranty, and almost every other particular which can bear upon the subject. As an

appendix there are added certain instructions to the veterinary surgeon, together with a description of each of the prohibited diseases.

The 1st section abolishes all anterior usages and customs with regard to the soundness or unsoundness of horses.

The 2d extends all the regulations respecting the sale of horses to the exchange of them likewise,

The 3d enumerates the faults and diseases which constitute unsoundness, and which are AMAUROSIS either in one or both eyes, SPECIFIC OPHTHALMIA in one or both of them; RESTIVENESS, GLANDERS, FARCY, ALL DISEASES OF THE RESPIRATORY ORGANS, MAD STAGGERS, IMMOBILITY, DEAFNESS, MANGE, and EPILEPSY.

4. No complaint can be heard when the sale has taken place in an open market, or when the horse has been sold by judicial authority, or sold in a lump with other commodities, as house, or land, or furniture, &c.

5. Without some especial understanding, the purchaser cannot bring his action for any other unsoundness than those enumerated in section 3, not even although it should be of so serious a nature as to lessen the value of the horse one-half. The seller may, however, by an especial understanding, exclude from the warranty any particular unsoundness, or unsoundness of every description; but this convention is only taken into consideration by the judges when the purchaser does not deny it, or it has been written and signed by him, or the contract was entered into before the tribunal, or is confirmed upon oath. No other proof is admitted, and the testimony of witnesses is particularly excluded. No proof on the part of the seller that the horse has acquired the disease or the fault since the time of sale is admitted.

6. This section authorizes the purchaser to prefer his complaint, even when the horse has not any of the specified diseases or faults, if he can prove that deceit has been used, and that, if it were not for that deceit, he should not have purchased the horse. In such case the vender is not only compelled to indemnify the purchaser, but he is summoned before the tribunal, and punished in proportion to the nature of the fraud. The same thing takes place when a person sells a horse which he knows to have been stolen.

7. The duration of the warranty is thus arranged,—*eight days* for AMAUROSIS and RESTIVENESS; *twenty-eight days* for OPHTHALMIA, DISEASE OF THE RESPIRATORY PASSAGES, and MANGE; and *six weeks* for FARCY, GLANDERS, IMMOBILITY, VERTIGO, DEAFNESS, and EPILEPSY. For each of these faults the tribunal will pronounce the cancelling of the agreement; and the vender will be compelled to return to the buyer the price which he had given, with interest at the rate of five per cent., and also to fetch back the horse at his



own expense, and indemnify the purchaser for any loss or damage which he may have sustained.

The time of the warranty commences at the hour that the horse was delivered either to the purchaser or to any one commissioned by the purchaser to receive the animal.

When a horse is sold upon trial, and the time for trial has been fixed, the bargain is considered as being concluded, if the purchaser does not return the horse within twenty-four hours after the expiration of the time of trial. In case the duration of the trial has not been fixed, the sale will be considered as perfect, when the buyer shall have paid the price of the horse, or have informed the seller that he intends to keep the animal. In both cases, the time of trial is included in the period of the warranty.

The buyer must make his declaration before the tribunal previous to the expiration of the period of warranty, and the tribunal must proceed to the examination of the animal either on that day, or the following one at latest, through the medium of three veterinary surgeons appointed for that purpose. An examination made after the termination of the warranty, or by veterinary surgeons not properly appointed, will be of no avail.

The examiners must neither be related to either of the parties, or engaged, nor in partnership with them in the purchase and sale of horses. When two of the three affirm the existence of the fault or unsoundness, the matter shall be considered as decided.

When the horse lies dead on the premises of the purchaser, the veterinary surgeons will decide whether a post-mortem examination is requisite. In order that it may come under the legal provisions that have reference to warranty, it is not required that the horse should die of the prohibited disease; it is sufficient that the existence of the disease shall be manifest to the examiners. The delay allowed to the purchaser to carry his complaint before the tribunal of the seller is one hundred and eighty days, reckoning from the day of the examination of the horse by the veterinary surgeons. That period having passed, the purchaser loses his right of damages, although his declaration may have been made within the specified time. When persons have entered into partnership as horse dealers, the complaint may be laid against either of them, without reference to the concern which he really had in the transaction. The purchaser may demand the reimbursement of the price which he paid for the horse, with interest at five per cent. from the day of payment, and for the stable expenses, but without interest for other occasional charges for shoeing and medical treatment—for indemnity with respect to any damage which the horse may have done—for the expense of compelling the seller to take back his horse—and, if the animal may have died,



for the expense of sending him to the knacker. Finally, the vender is condemned to all the expense of legal proceedings, and the fees of the veterinary surgeons.

When several horses have been bought at the same time, and the buyer has given notice that he means them for the same team, the seller is bound to take back all, if one of them should prove to be unsound; but where he has not given this notice to the seller, he can only return the horse that proves to be unsound. But if in this last case the parties cannot agree, on account of several horses having been bought in the same lot, the judge shall divide the whole sum by the number of horses, and take the quotient as the sum to be returned to the purchaser.

#### NASSAU.

An edict of the 24th of October 1791, gives the following list of redhibitory diseases:—In the horse the different species of VERTIGO, IMMOBILITY, GLANDERS, BROKEN-WIND, and EPILEPSY, with a warranty of *twenty-nine days*. In cattle, EPILEPSY, CHRONIC DIARRHŒA, and VERTIGO, with a warranty of *twenty-nine days*. In sheep, TURNSICK, with *fifteen days*; and SCAB, with *twenty-nine days* of warranty; but only where large flocks of sheep are kept. As to goats and swine, they can be returned for those diseases alone which may have been expressly agreed upon by the parties. Declaration of this understanding between the parties must be made to the authorities of the place at the time of sale, or the sale must be effected in the presence of two witnesses.

In cases of conventional warranty, the diseases referred to must be expressly and clearly enumerated in the contract, the vague expression of the seller warranting against all faults being of no avail. The vices against which the seller does not warrant the animal or animals must be mentioned in the contract.

The duration of the warranty commences from the time at which it was agreed upon. The declaration of the existence of unsoundness ought to be made, before the expiration of the warranty, to the mayor or provost of the commune in which the buyer resides; and an examination of the animal must take place before the warranty terminates. Of the three veterinary surgeons whose opinion must be obtained, one must be nominated by each of the parties, and the third by the mayor. The post-mortem examination, if it ever be necessary, must take place within twenty-four hours after the death of the animal.

On a declaration by the veterinary surgeons that they are unable to decide as to the soundness of a certain animal, twenty-nine days shall be added to the duration of the warranty; and, then, a second

examination shall take place. If the veterinary surgeons cannot then give a decisive opinion, the purchaser must keep the animal. During this process the buyer ought to have the care of the animal, unless the seller should demand that it should be committed to his custody. In neither case must the animal be placed in the stables or yard of a public inn. The cost of the keep of the animal during this period must be defrayed by the loser. Complaint of deterioration of half of the value of the horse, in consequence of some prohibited disease, may be made.

#### BRUNSWICK.

Unsoundness in the horse, in the Duchy of Brunswick, is confined to RESTIVENESS, AMAUROSIS, GLANDERS, and AFFECTIONS OF THE RESPIRATORY SYSTEM.

In the portion of Brunswick Lunenbourg which is annexed to Hanover, and also in Calmberg, AMAUROSIS, GLANDERS, and DISEASES OF THE RESPIRATORY SYSTEM, are the redhibitory diseases.

At Zell, and at Hildesheim, RESTIVENESS, GLANDERS, AMAUROSIS, DISEASES OF THE RESPIRATORY SYSTEM, and SPECIFIC OPHTHALMIA, are the only unsoundnesses which the law acknowledges, and with a warranty of *three months*.

#### THE FREE TOWNS.

In Hamburg there is no warranty of horses purchased in the market.

In Lubeck the redhibitory diseases in the horse are MANGE, GLANDERS, RESTIVENESS, and IMMOBILITY.

In Francfort the old ordinances from 1509 to 1611 are still in force. The warranty is against THEFT during the time of war, AFFECTIONS OF THE RESPIRATORY PASSAGES, RESTIVENESS, and GLANDERS; to which, in 1626 and 1733, were added IMMOBILITY and EPILEPSY. The duration of the warranty is *four weeks*.

As to pigs, and other animals fattened for slaughter, and which are liable to be attacked with HYDROPHOBIA, a delay of three days is accorded. In unfattened animals the warranty is extended to *four weeks and a day*.

In horned cattle the warranty against PHTHISIS extends to *a year and a day*.

*Recueil, August 1838.*

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## ON THE INTRODUCTION OF AIR INTO THE VEINS OF LIVING ANIMALS.

[Continued from vol. xi, p. 319.]

### II.—IN THE HORSE.

#### *A. Horses not weakened before the experiment.*

In four animals death supervened within the space of fourteen minutes in three of them; but the life of one of them was prolonged to an hour and forty-four minutes, because from some fortuitous circumstance the introduction of the air was interrupted during the space of an hour and twenty minutes.

#### *B. Horses weakened before the experiment.*

In four of these horses death ensued between nine and sixteen minutes after the commencement of the experiment.

After these experiments, the commission is authorized to conclude, that in the horse the introduction of air into the jugular vein by means of an incision produces death in a space of time much less variable than in the dog. This difference is very evident, and should engage the attention of the Academy\*.

In horses and in dogs, other circumstances being the same, death occurs more promptly in subjects weakened before the experiment than in those that were not so.

#### § II.—*The time of death after the insufflation of air from the chest of a human being.*

The astonishing rapidity with which death ensues when a man blows into the veins of an animal air from his own chest, is strangely contrasted with the slowness with which, in the majority of cases, the effect is produced when atmospheric air is introduced by the means just alluded to. Three dogs were killed by one insufflation in the space of from a half-minute to two minutes. Two horses and a mule were killed by two insufflations in the space of five or six minutes. The animals fell as if they were struck by lightning.

Is it to the force with which the air is driven into the veins, and the great quantity of gas that may also be injected into the blood, that we are to attribute the rapidity with which death is effected in this case? Such is not the opinion of the reporter. He thinks

\* The reporter believes that the principal cause of this difference consists in the facility and the regularity with which, by means of an ample orifice in so large a vessel as the jugular, the air is introduced. In dogs the vein, and, consequently, the incision being smaller, the air cannot be so easily or regularly or continuously introduced.

that these two circumstances ought to be taken into serious consideration; but he believes that the quality of the air which has served for the respiration of man, before it is introduced into the veins of the animal, is very much concerned in the production of the phenomenon which we are now studying. It will be necessary to appeal to new experiments for the complete explication of this curious and important phenomenon.

### § III.—*The mechanism or real cause of death.*

If it is now demanded, what are the real causes of the death which supervenes on the introduction of air into the bloodvessels, we reply, that the principal ones are, in our opinion, the following:

1. The enormous distention of the right cavities of the heart by the air which is thrown into them, and which is there dilated by the heat of the blood—a distention which does not permit this organ to resume the regular discharge of its functions.

2. The presence of air in the pulmonary artery and its ramifications, which, mingling with the blood, gives it a viscosity, or *spumosity*, which prevents its free circulation in the pulmonary capillaries\*.

3. In the cases in which the air penetrates into the venous system of the brain, the compression which it exercises on that organ may be the cause of death, without calling into the question any other action, physical or chemical, as yet unknown, which it may exercise on that organ†.

Such is, in our opinion, and after the deepest study of the symptoms and changes that we have had the opportunities to observe—such, we say, is the mechanism of this kind of death. Nysten had already insisted on the distention of the right cavities, and on the compression of the brain in cases in which the air penetrated into the vessels of that organ: but he had said nothing of the third cause alluded to.

It is also well understood, that when it is once disseminated through the whole extent of the circulatory current, the air becomes

\* It is possible also that the air contained in the pulmonary system exercises a compression on this organ, which mechanically prevents the respiration, and, if the term may be pardoned, suddenly asphyxiates (*asphixie*) the lung.

† The reader must not forget how constantly we find a certain portion of air in the brain of horses that have been destroyed by the introduction of air into the jugulars, and which does not ordinarily occur in dogs, at least when they are placed in a horizontal position. Is this one of the reasons that horses are generally destroyed so much sooner than dogs by the insufflation of air?



a kind of foreign body, the effects of which have not yet been sufficiently studied.

We will add, that, in the second of our experiments there existed traces of inflammation of the internal membranes of the right cavities of the heart; and it then appeared to us very probable, that the prolonged presence of the air in these cavities might have had somewhat to do with the existence of that inflammation.

§ IV.—*The proper means to prevent the spontaneous introduction of air, and to remedy the accidents produced by its introduction.*

The application of a compressive bandage round the chest and belly of a dog has not prevented the introduction of air into the jugular vein, whether the animal was in a horizontal or vertical position. The experiment, however, not having been made in the most precise and satisfactory manner, no legitimate conclusion can be drawn from it. We have been enabled by strong compression of the chest and belly (compression which, in 1811, Nysten, without sufficient proof, considered as an efficacious means of remedying the accidents produced by the introduction of air into the veins), to force from the vein a certain quantity of blood mingled with air: but we must not conclude that any great advantage will result from this. Our experiments on this point have been much too limited.

§ V.—*The application of these experiments to the introduction of air into the veins of the human being during certain surgical operations.*

We are perfectly aware with what circumspection we ought to proceed, when we draw certain conclusions with regard to the human being, from that which takes place in the brute. Nevertheless, there are certain inductions of this kind, the legitimacy of which the most strict and severe physiology cannot question.

Then we are authorised, on the faith of the experiments which we have recorded, to believe that air may be introduced into large veins divided in operations on the human subject, in the neighbourhood of the superior part of the chest, and the orifice remaining unclosed whether by reason of a morbid state of the tissues or some physical or mechanical cause. Not only is this possible, but it is, unfortunately, too often the case. It was evidently so in the six cases that were briefly noticed in the early part of this report.

As to the quick and almost instantaneous access of death in certain operations when the air obtains admission into the veins, we must confess that it is difficult to account for it from the simple presence of the air, seeing that, in many cases, the air may be in-

troduced ten minutes, or a quarter of an hour, if not altogether with impunity, yet without the serious compromise of life. In order to comprehend the great difference in these cases, we must admit that the air acts in a more deleterious way in the human being than in animals—a fact that has been very satisfactorily demonstrated; or that the state of exhaustion in which the subjects of the operation find themselves, whether from pain, or the loss of blood, or the re-action of the nervous system, too powerfully seconds the injurious effects of the air—a circumstance not very probable—or the position in which the subject to be operated on is placed, and which may too much favour the determination of the air towards the brain. The impression on the mind of the person operated upon, at the moment when the air is introduced into the heart, is another circumstance not to be overlooked in our inquiry into the sudden death which then occurs.

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### THE STUD OF EMIR BESCHIR.

No one can form an idea of the Arabian horse who has not visited the stables of Damascus, or those of the Emir Beschir. This superb and graceful animal loses its beauty, its gentleness, its picturesque shape when transplanted from its native soil and its customary habits to our cold climate, and to the shade and solitude of our stables. It must be seen near the tent of the Arab of the desert, its head gracefully in action between its legs, shaking its long black mane like a moving parasol, and brushing its beautifully polished sides, shining like silver, with the turning sweep of its tail, the extremity of which is always dyed of a purple colour. It must be seen with its splendid cloths, embroidered with gold and pearl; its head covered with a net of blue or red silk, worked with gold or silver lace, terminating in dangling points falling upon its nostrils, by which he alternately veils or exposes to view, at each undulation of the neck, the fiery, proud, broad, intelligent, though gentle ball of the protruding eye. It must be seen, as at that moment, mixed in a group of two or three hundred; some lying in the dust, others kept in check by iron rings and fastened to long ropes which cross the courts; others again escaping to the sands, and leaping at a bound over the lines of camels which impede their course; others were held in hand by young black slaves, dressed in scarlet vests, resting their caressing heads upon the shoulders of these, as it were, their children; others playing together without restraint like colts in a field, springing upon each other, rubbing their foreheads, or mutually licking their beautifully shining and silvery sides; their eyes fixed upon us with anxious curiosity, owing to our European costume and novel accents; but soon growing familiar, and gracefully holding out their necks to our caressing and coaxing touch. The intelligence observable in the physiognomy of these horses exceeds all belief; their thoughts are depicted in their eyes, and in the convulsive motion of their lips and nostrils, in as striking a manner as the expression of the soul upon a child's countenance.—*Pilgrimage to the Holy Land*, by Alphonse de Lamartine, in 1832 and 1833.

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[This is, indeed, painting *con amore*; but we can forgive a little exuberance of imagination on such a subject.—Y.]

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HIPPO-PATHOLOGY.

DISEASES OF THE AIR-PASSAGES.

*By* WM. PERCIVALL, *Esq.* M.R.C.S., *V.S.* 1st *Life Guards.*

THE conduits for the air into and out of the lungs are the chambers of the nose, the larynx, and the windpipe and its ramifications, the bronchial tubes: altogether, these parts are comprised under the appellation of the *air-passages*. Similar parts, similarly connected, constitute the air-passages in man; but between man and horse there is this difference—that the one is able to respire both through his mouth and nose, while the other can breathe but through his nose alone: the communication between the cavity of the mouth and the orifice of the windpipe being occluded by the soft palate, which in the horse is of extraordinary dimensions. To this fact, familiar as it is, I should say by no means sufficient importance had been attached in the consideration of the pathology of the air-passages. In consequence of the want of another outlet or entrance for the air, the nasal passages are in the horse made large and capacious, and from the circumstance of *all* the air respired having to pass through them, these passages necessarily become more under the influence of the aerial current—more obnoxious to any effluvia contained in that current—than the same parts are in man. Hence it is that catarrhal affections in the horse have their seat in the chambers of the nose in particular, and not in the mouth and throat, as in man; hence it is, also, that glanders is (or rather used to be) a common disease in the former, while in man, unless it happen by inoculation, the disorder is unknown.

The same difference of structure will, in a measure, serve to account for the extreme proneness of the horse to pulmonary affections. The nostrils being large and widely open for the admission of air, the membrane lining the nose becomes so much the more exposed and subject to changes of temperature and to noxious effluvia in the air, whence it follows that inflammation is likely to be set up in some part of the nasal membrane, and from that part creep down the windpipe and settle upon the lungs.

This membrane being so very subject to disorder, and being the seat of catarrh, of cough, of glanders, of roaring often, and sometimes of inflammation in the lungs, well deserves our especial attention and (to the extent that we are able to examine it) frequent inspection. On opening either nostril we discover its surface displaying a dotted, shining, humid aspect, of a more or less carnation hue, without any collected mucus upon it, that being one of the earliest indications of disorder in it. It is a part we should never fail to examine in passing a horse in regard to soundness: it is a part which calls for our especial examination in all the cases comprehended in the class of "Diseases of the Air-Passages."

#### CATARRH.

DERIVATION.—*Catarrhus*, from *κατάρρεω*, *defluo*, I flow down.

SYNONYMY.—A cold, a defluxion, a discharge from the nose.

DEFINITION.—A mucous defluxion from (commonly) both nostrils, increased redness of the Schneiderian membrane, oozing of tears from the corners of the eyes, swellings underneath the jaws, snorting, cough, with or without febrile disorder.

THE VULGAR AND VAGUE APPELLATION OF "COLD" has, among professional men, very properly given place to the more definite and intelligible one of *catarrh*. Hardly any two persons attach the same meaning to the word *cold*: both surgeons and veterinary surgeons are so often misled by it, that nothing short of actual inspection of the case can or ought to satisfy the medical adviser. A groom will report to his master that his horse has "only a cold," when the animal is probably labouring under an attack of bronchitis or pneumonia; and will declare a paroxysm of specific ophthalmia to be but "a cold in his eye;" and do this, not from any desire to conceal the truth, but from a confident sense of the rectitude of his judgment. Many a life, and still more eyes, have been lost from medical aid being deferred or kept aloof after this specious manner.

CAUSE.—The appellation of "cold" for this disorder has evidently sprung from the circumstance of its production being commonly connected with exposure to diminished temperature: cold, however, is but the *predisposing* cause, the immediate excitant appearing to be *heat*. It is not during the time that horses are turned out, exposed to every inclemency of weather, that they take catarrh; but after, and commonly very soon after, they have been taken up and put into stables, and especially when the stables prove to be warm ones. It is the transition from cold to heat, and not that from heat to cold, that generates catarrh: in a general way, horses may be taken out of their warm stables and turned into cold situations (provided they are not exposed to wet) without experiencing any harm from the change. The ordinary subjects of catarrh are



horses three, four, and five years old, passing from the dealer's or breeder's hands into warm stables; and particularly during wet and cold springs and autumns. In some years catarrhal affections become so generally prevalent, and in their attack manifest so much more than ordinary severity, spreading so rapidly among young horses, that the disorder not only assumes much of the character of an epidemic or influenza, but has the appearance of being contagious; though it differs from influenza, properly so called, in not being attended with that sudden supervention of debility which is so characteristic of the latter disorder. In old veterinary works we find catarrh ascribed, above all other causes, to "obstructed perspiration." In old horses, and such as are at their work, no doubt it is an occasional cause; but the ordinary subjects are young horses—horses that have not yet commenced work, and that are not consequently often sweated. Horses whose skins have become wet, either from having been sweated or washed, and are afterwards suffered to grow dry without being rubbed, will, particularly in cold weather, be likely to take a cold or shivering fit. The same observation may be made in regard to a horse allowed to stand in any situation where he is exposed to a current of air. But in all these cases I believe heat must supervene before an inflammatory disorder will manifest itself.

SYMPTOMS.—A catarrh may be *slight* or *severe*. It may exist with fever or without fever. A slight catarrh is characterized by a watery distillation mingled with a flaky mucous discharge from the nose; flushed Schneiderian membrane; oozing of water from the corners of the eyes, with drops of mucus standing in them; small, loose, diffuse swellings under the jaw; occasional snorting, and, perhaps, coughing; with dulness and diminished appetite: though the appetite may continue unaffected, and the spirits remain undepressed.

IN CATARRH IN WHICH FEVER IS PRESENT—"catarrhal fever," as it is called—the horse from the first appears dull and unwell, and loses his appetite; feeling cold, and, perhaps, shivering; which is succeeded by a sensation of unusual warmth in the skin and extremities. The Schneiderian membrane appears turgid and reddened, but its surface is dry. The earliest defluxion from the nose is a thin, limpid, colourless fluid like water, which, in the course of two or three or four days, depending upon the abatement of the fever, becomes gradually converted into one of a ropy or viscid, pure mucous character: at this time, also, the animal in a measure recovers his spirits and appetite.

IN SEVERE FORMS OF CATARRH the fever will run high; and the nasal discharge, at first sparing, become yellow, gelatinous, and lymphic; turning afterwards into a thick muco-purulent defluxion,

and becoming altogether as abundant as it was at first sparing. The glands under the throat will swell considerably, and evince tenderness on being felt or compressed; those below the roots of the ears will likewise become tumid, giving rise to what grooms call "the coming down of the kernels." Cough is commonly present, and in some cases sore throat. In a few cases so extensive and violent is the inflammation in the membranes of the nose and throat, and so abundant the discharges from them, that embarrassment is occasioned in respiration, which may increase to that degree to produce violent and convulsive fits of coughing, and even to put the animal in danger of suffocation unless relieved by the operation of bronchotomy. This, however, is what rarely happens, save in the epidemic variety of catarrh.

THE DURATION of an attack of catarrh is ordinarily from one week to three. Should it not appear to be on the decline about the third week, we may infer that the disorder is becoming *chronic*, in which form its duration cannot be said to have any definable limits.

IN CHRONIC CATARRH, the nasal defluxion it is which constitutes the prominent and troublesome symptom: indeed, it is often the only one remaining. Sometimes the matter is yellow, from the admixture of pus with mucus; at others, it is altogether as remarkable for whiteness, and possesses a clotted or grumous character: in a few cases it consists of an opaque, thin, dirty-looking mucus. In general these chronic cases "run themselves dry," as the phrase goes; though every now and then we meet with one degenerating into *nasal gleet*, an affection I shall consider hereafter.

THE TERMINATION of catarrh, taking its ordinary course, is in the return, more or less speedy, of health. At such times, however, as it manifests more than usual severity, and particularly when much inflammation and stoppage in the cavities of the nose and throat are indicated, there is great reason to apprehend its running into bronchitis, in which extended and modified form it becomes pregnant with all the dangers of an inflammation in the lungs. Many a horse has changed hands having at the time a simple "cold," which in his new owner's possession has run into an attack of bronchitis; from which, should he escape with his life, there is still great risk of his becoming a roarer. Catarrh may prove but the precursor of strangles. But again, cases do occur, though happily for us but rarely, wherein the disorder, after having run its course, and all signs of inflammatory action have subsided, leaves a discharge from one or both nostrils, to which we have given the name of *nasal gleet*; and the appellation is applicable enough, so long as the defluxion presents nothing beyond the catarrhal character: from the moment, however,

that it loses this, and especially when it has turned to a thick, turbid, dingy-looking mucus, clinging to the nostrils of the horse, and sticking with gluey tenacity to the fingers of the person inspecting them, we must—should we not have done so before—take care to remove the animal into a stable or box apart from other horses; and, at the same time, advise his owner of our suspicions of his ultimately becoming glandered. This, however, is a part of my subject which cannot be thoroughly understood until the disorders, “nasal gleet” and “glanders” come to be considered.

PROGNOSIS.—Of itself, a catarrh is an innocuous painless disorder, often so mild as hardly to call for medical interference, and never resisting such counter-agency for any very long period of time. It is only from its *sequelæ* that adverse results, and occasionally even fatal consequences, are to be dreaded: I mean bronchitis and roaring, nasal gleet and glanders.

PATHOLOGY.—Observations in this field of veterinary practice are well calculated to throw a light upon one or two extremely interesting and still disputed points touching the cause and nature of catarrh in general. I have already endeavoured to shew, from results of every day occurrences, that the disorder among horses appears attributable to heat, and not to cold; although from the circumstance of that heat acting in combination with miasms generated in situations where horses are congregated, it may be difficult, in many instances, to discriminate between the effects of heat and of this insalubrious condition of the atmosphere. In very foul situations, we have not only cases of catarrh occurring, and those of unusual severity, but we meet with cases of glanders and farcy, and ophthalmia: clearly evincing that at least these latter diseases are attributable to the impurities of the atmosphere, which are at all times rendered more influential by the accompaniments of heat and moisture. We cannot demonstrate that inflammation is present in every case of simple catarrh or defluxion; but when it is, I see no reason for viewing it otherwise than as common phlegmon: though in cases of scarlatina, and some forms of influenza, the appearances the membrane assumes, together with the products from it, are such as to induce us to a different conclusion. The seat of catarrh is the Schneiderian membrane, and in particular that portion of it enveloping the *septum nasi*. From this it mostly extends to that part covering the turbinated bones, in which situation it is apt to occasion some degree of stoppage in the nose, arising either from tumid condition of the membrane, or from augmented secretion. Should it extend to the fauces and larynx, the consequence will be sore throat. In the windpipe and its branches—throughout which the same membrane

is continuous—it will give rise to the disease called *bronchitis*. The frontal sinuses are likewise in the way of becoming affected, and inflammation in them, no doubt, would occasion head-ache, manifested by unusual dulness or heaviness: further than this I am afraid we know but little about this form of catarrhal disorder.

THE TREATMENT of catarrh is in general a very simple affair; consisting rather in what French physicians have styled *médecine expectante* than in any active remedial measures.

FOR A SLIGHT CATARRH, take the horse out of his warm (perhaps foul) stable, or from any cold or wet situation in which he may happen to be, and turn him loose into a box of the temperature of 55 deg. of Far., and take care that he has an ample bed, clean, dry, and free from impurities. In cold weather clothe him warmly, and, if required, flannel-bandage his legs. Give him nothing to eat for the first two days but sloppy bran-mashes, and let him have linseed tea or gruel, or chilled water, to drink, a pailful of either beverage being hung up within his box, of which he may partake at pleasure. Encourage any flux there may be from his nostrils by steaming them twice or thrice a day with scalded bran in a hair nose-bag. Should he have any cough or soreness of throat, let his throttle be rubbed with this liniment:

Solution of ammonia,

Olive oil, in equal parts: well shaken together in a phial.

Should the dung prove hard and dark-coloured, an enema of soft soap and tepid water is to be given, and repeated daily until the dung becomes of a pultaceous consistence. Purgation is inadvisable, and therefore I abstain from giving aloes; the only medicine I give, if any, is a ball composed of

Potassio-tartrate of antimony, ʒj

Nitrate of potash, ʒiij

With honey or treacle sufficient.

Some veterinarians are in the habit of giving the spirits of nitric æther in one or two ounce doses in gruel, twice or thrice a-day.

IN SEVERE CATARRH, and particularly when there is much accompanying fever, blood-letting is practised with advantage; though even in this case, the soothing and privative mode of treatment will in time work a cure. But blood-letting shortens the ailment, and often proves of service in preventing any serious extension of the inflammation. Should the pulse run high after bleeding, nauseate with scruple or half-drachm doses of white hellebore-root; but do not repeat the ball oftener than twice a-day, and take care to narrowly watch its effects. Keep the bowels soluble by injections, and continue the gruel or linseed drink, and the bran-mash. Boiled carrots, turnips, potatoes, scalded oats, malt-mash, fresh



grains, and, in summer, green meat of all kinds, are all proper, and most so during convalescence.

PREVALENT SORE-THROAT AND TROUBLESOME COUGH are to be relieved—should the ammonia liniment prove unavailing,—by the application of a blister to the throttle, or, what in urgent cases is most speedily effectual, a mustard-plaster, which may be sponged off after an hour's time, and by so doing the hair and skin preserved.

FURTHER OBSERVATIONS.—No exercise is to be allowed: on the contrary, let quietude be enjoined. There are cases in which steaming the nostrils is apt to create irritation and much annoyance, which would be a sufficient reason to omit this, in general, very beneficial practice. In respect to rowels under the jaws, and setons through the skin of the throttle, I am of opinion that they are not adapted to recent cases, or those in which any very active inflammation or fever is manifested; but to such cases alone as come under the denomination of *chronic*, and, as such, are likely to prove tedious and of long duration.

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## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

### THE PANCREATIC JUICE.

THERE is no animal fluid which remained so long unknown as the pancreatic juice. The want of a reservoir in which it could accumulate, and, more particularly, the deep situation of the gland which furnished it, afforded almost insurmountable obstacles to the experimenters who wished to procure it from the living animal. Francis de Boe was the first who maintained that it was acid, and he founded on this a theory of its use, which gave rise to long discussion in the latter part of the seventeenth century. R. de Degraef, a disciple and partisan of Boe, made, in 1664, the first successful experiment for the obtainment of the pancreatic juice from a living dog.

He opened the duodenum—introduced a small quill into the pancreatic duct, and caused the fluid to fall into a little bottle placed beneath. He thus collected a considerable quantity of the juice. He found it almost limpid, and a little viscid. It had sometimes an agreeable acid taste; at other times it was saline; oftenest there was a mingled saline and acid flavour. Theories respecting the use of this fluid, conformable to these experiments, had previously been advanced, and might have had some influence on his opinion.

Florent Schuyl, also the pupil of Boe, repeated the experiment of Degraef, and pretended that he found an acid in the pancreatic juice which he had collected; and he supported this by the fact, that he had coagulated milk with this fluid.

The researches of Wepfer, Pechlin, Brunner, and J. Bohn, did not confirm the assertions of Degraef and Schuyl. According to them, the pancreatic juice was turbid, white, not acid, but having the same slight saline flavour which lymph had.

The experimentalists that followed did not agree with regard to the nature of this fluid. Viridet said that he had found it acid in several animals, and that it had sensibly reddened the tincture of turnsole. Heuermann, on the contrary, denied that it was capable of reddening this tincture. Fordyce found that, in the dog, it was colourless, aqueous, and salt. Finally, Majendie found the pancreatic juice of a dog slightly yellow, inodorous, and possessing a saline taste. He added, that it was alkaline, that it coagulated by means of heat, and that, in birds, it was altogether albuminous, or, at least, when exposed to heat it coagulated like albumen.

Later, the most celebrated physiologists and medical men, as Hoffman, Stahl, Boerhaave, Haller, and others, have contended that the pancreatic juice differs very little from saliva. This opinion is adopted by the most distinguished physiologists of the present day.

In this state of things we must not be surprised at the numerous and strange hypotheses that have been adopted in order to explain the office which it performs in the digestive function. Some imagine that it separates the chyle from the excrementitious portion of the intestinal contents; others suppose that it moderates the acridity of the bile; while others assert that it delays the passage of the chyme until it has dissolved those portions of the aliment that were not digested in the stomach, and contributes to their assimilation. The great Haller, after having wearied himself with conjectures on its uses, says, that it may effect many more purposes than are yet known; and, in more modern times, Magendie has confessed that it is impossible to say what is the real function of this fluid. All these circumstances have determined us to collect the pancreatic juice as it flows from the living animal, and to subject it to chemical analysis.

I. *The pancreatic fluid in the dog.*—The subject of the experiment was a large butcher's dog. After having placed him on his back, and secured him there, we made a longitudinal incision in the direction of the linea alba, between the inferior extremity of the sternum and the umbilicus. Then, by means of the forefinger hooked, the duodenum and the head of the pancreas were drawn out of the abdomen, and laid on a piece of linen, the

greater part of the pancreas being left in the abdominal cavity. The pancreatic duct, which is very large, does not in the dog always anastomose with the ductus choledochus, as has been already remarked and figured by Conrad Brunner, but it penetrates into the duodenum much lower than it. It is very easily recognised in its passage across the intestine previous to its insertion. A slight incision was made into it in a longitudinal direction, and a small glass tube was inserted, and secured there by means of a ligature. Six minutes afterwards it began to be filled with the fluid, and in twenty-six minutes the first drop fell into the little bottle beneath. It then began to be discharged at the rate of about a drop in six or seven seconds. When the animal breathed deeply, or the viscera of the abdomen were compressed by the diaphragm, the fluid was discharged more copiously: this was evidently produced by the pressure on the portion of the pancreas which was left in the abdomen. The liquid was turbid, and slightly red at first, on account of a little blood that mingled with it; but, afterwards, it became limpid, or with a slight opaline tint, with a white-blue reflexion. It was of the consistence of the white of an egg, and had a slight but well-marked saline taste. In the space of four hours we procured about ten grammes of it (about one-third of an ounce—a quantity sufficient for chemical analysis). We withdrew the tube from the duct, and applied a ligature round it, in order to prevent the fluid from running into the abdomen. The duodenum and the remaining part of the pancreas were returned into the abdominal cavity, and the wound was closed with a suture. On the following day he drank some water, and ate freely of bread and milk, but which was afterwards returned by vomit. His appetite was as usual on the third day. Four days afterwards he voided some hard and dry excrement, and for some days subsequently the fæcal matter was in the same state. The wound, which he often licked, went on favourably. The ligatures separated, leaving some slight fleshy protuberances, and in about ten days the wound was closed. The dog recovered his former spirits and condition. He was permitted to live eleven weeks after the operation, at the end of which he was sacrificed in another experiment. We did not forget to examine the state of the pancreatic duct, or rather ducts, for there were two of them,—that which we had opened and tied, and a smaller one which joined the ductus choledochus. To our great surprise, the first canal was permeable, and only a little contracted at the place where we had applied the ligature. It was re-established by a deposition of coagulable lymph on its external coat, and by the formation of a new canal through this. (A long account is now given of the chemical analysis, the result of which shall be presently stated.)

II. *The pancreatic juice in a sheep.*—The subject of the opera-

tion was an adult sheep. It was far more difficult to lay bare the pancreatic duct than in the dog, because the duodenum and the pancreas were in part covered by the large intestines. We opened the abdominal cavity by a transverse incision from below the right ribs to the linea alba, and then drew out the duodenum. We next sought for the ductus choledochus, and tied it below the point at which the cystic canal joins the hepatic one. That being done, the ductus choledochus was tied a second time at the point of its insertion into the duodenum, and divided above the ligature, in order to render the introduction of a tube into its interior more easy. After that it had been freed from the bile which it contained, we introduced an elastic tube, and confined it with a ligature; and as the pancreatic duct opened itself into the ductus choledochus two inches above the insertion of the latter into the duodenum, the pancreatic fluid necessarily ran through the tube.

Every thing being thus disposed, we replaced the duodenum in the abdomen, and directed the tube outward, and passed a seton through the wound. It was not until the expiration of three hours and a half that the first drop of the pancreatic juice escaped from the tube, and then it continued to flow at the rate of a drop in every four or five seconds. At the commencement the fluid was white and clear as water. It feebly reddened turnsole, and consequently was acid, and it dropped from the fingers like the white of an egg. In the course of the five following hours we obtained rather more than five grammes of it. The animal died in the night.

III. *The pancreatic juice of a horse.*—A horse being destroyed after it had heartily fed on oats, the abdomen was opened immediately, and the excretory canal of the pancreas discovered and tied. We obtained about one gramme of pancreatic juice. It was of a pale yellow colour, and nearly limpid, with a slight opaline tint. It was viscid, like the white of an egg. It feebly reddened the tincture of blue turnsole, but produced no effect on the red.

IV. *General conclusions.*—The pancreatic juice contains,

1. Of solid matter 8.72 in the dog, and from 4 to 5 per cent. in the sheep.

2. These solid parts are,

- a. Osmazome.

- b. A matter which reddens by the addition of chlorine. This is found only in the dog, and not in the sheep.

- c. A matter analagous to deposition, and probably associated with the salivary fluid.

- d. A considerable quantity of albumen, constituting about half of the dry residue. The pancreatic juice of the horse was also rich with albumen.

- e. A very little free acid—probably acetic. Although in small



quantity, it was to be detected not only in the pancreatic juice of the dog and the sheep, but also in that of the horse.

It is worthy of remark, that the portion of pancreatic juice which ran at the close of the experiment, in the dog and the sheep, was slightly alkaline. Did this change depend on the exhaustion of nervous influence caused by the experiment?

*f* The residuum, after burning, amounted to 8.28 per cent. of dry matter in the dog, and of 29.7 per cent. in the sheep.

It contained of soluble salts,

*a.* Some alkaline carbonate, which doubtless existed in the fluid in the state of an acetate. This salt was very abundant in the dog, but in small quantity in the sheep.

*b.* A great quantity of alkaline chloruret, both in the dog and the sheep.

*c.* A small quantity of alkaline phosphate in the dog, and a great quantity in the sheep.

*d.* A little alkaline sulphate both in the dog and the sheep.

No alkaline sulpho-cyanuret was found.

The alkali, both in the dog and in the sheep, consisted of a great quantity of soda, with very little potash.

The salts of the residuum not soluble in water were a little carbonate and phosphate of lime.

If we compare the composition of the pancreatic juice with that of the saliva of the dog or the sheep, we shall find the following differences:—

*A.* The solid residuum of the saliva does not amount to more than half of that of the pancreatic juice.

*B.* The saliva contains some mucus, and a peculiar animal matter—the *animal matter*. If there is found any albumen or caseous matter in it, it is in very small quantity. On the contrary, the pancreatic juice contains a considerable quantity of albumen and caseous matter. We do not find any mucus, and the true salivary matter is in very small quantity, if it exists at all.

*C.* The saliva is neutral, or contains a very small quantity of alkaline carbonate. The pancreatic juice contains a little free acid.

*D.* The saliva of the sheep contains some alkaline, sulpho-cyanuret. There is not any in the pancreatic juice.

The other salts are nearly the same.

It results from this, that the physiologists who believe the pancreatic juice to be identical with the saliva are in error.

## THE ADVANTAGEOUS USE OF CREOSTOTE IN GLANDERS IN THE HUMAN SUBJECT.

*By J. W. IONS, Esqr. V.S., Waterford.*

[In February last I received a letter from Mr. Ions, stating the dangerous and dreadful situation of his son, who had been accidentally inoculated with the matter of glanders. From a misdirection of the letter, I did not receive it until six days after its date. I immediately communicated with Dr. Elliotson, who, with a degree of kindness which Mr. Ions and myself will never forget, immediately favoured us with his opinion and advice. Dr. Elliotson urged Mr. Ions to lose no time in again communicating with him or with me; and the statement of that gentleman will best explain the progress and result of the case. The letter was directed to me.—Y.]

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Waterford Veterinary Establishment,  
Feb. 28, 1839.

My dear Sir,—WITH many thanks do I acknowledge the receipt of your kind letter of the 25th instant; and, for your information, beg to subjoin a history of my son's case.

On the 15th of the last month he was attacked with a severe cold, and which continued bad for a few days, although the usual treatment was adopted. At length the cold got better; but the tonsils remained very much inflamed and enlarged, and there was a small sore on the ala of the right nostril.

On the 20th, he had occasion to examine a brewery-horse belonging to Mr. Cherry, of this city, that was labouring under acute glanders. The horse snorted in his face, and covered it with the nasal discharge. My son wiped it off with his handkerchief, and thought no more about the matter.

On the 22d, the swelling of the tonsils continuing, a blister was applied to the throat. The result was somewhat extraordinary, for, instead of a serous discharge, an abundance of well-formed purulent matter exuded.

On the 24th, he felt very unwell. His nose was exceedingly sore, the breathing through it quite obstructed, and the right eye slightly affected. The pulse was 116, with profuse discharge from the nostril of a ropy, glairy appearance.

I immediately sent for a physician, who ordered aperient medicines, and the local application of a solution of the nitrate of silver.

On calling, on the next day, he found a large ulcer on the

Schneiderian membrane, and which was extending upwards. He ordered the solution already prescribed to be injected up the nostril, and he ordered small doses of calomel. Carrot poultices were applied occasionally, which gave temporary relief. Sarsaparilla was also prescribed.

A second physician had been called in, but, the case going on unfavourably, and I being dissatisfied with the treatment, I wrote to you and to Sir Astley Cooper\*.

On the night on which my letters were despatched, the disease began to assume a most alarming appearance, and I urged his medical attendants to have recourse to the creostote, and, indeed, which I had before pressed upon them. They consented, and prescribed an ointment in the proportion of  $\text{ʒi}$  of the creostote to  $\text{ʒvii}$  of lard. The slightest application of this produced the most agonizing pain, and, of course, it was immediately discontinued, and the creostote was condemned. I affirmed that no fair trial had been given to it; and, as they now considered the case of my son a hopeless one, I respectfully told them that I should pursue my own course.

The disease had now assumed the most fearful character: there was profuse nasal discharge, accompanied by the most offensive smell, and ulceration extending into and seemingly occupying the whole of the nasal cavities. There was great prostration of strength—cold perspirations—pulse 112—laborious breathing—and every appearance of approaching death.

I added two minims of the creostote to an ounce of water, and injected the mixture up the nose as high and as universally as I could, and this I repeated three times in the day. I pledge you my honour, that, after the third injection, a change almost magical took place. The discharge in a great measure ceased, and, two days afterwards, the ulcers began to assume a healthy appearance, and they have rapidly improved ever since. Before your kind letter arrived, I had considered him out of danger; and most gratified was I to find that I had been using an injection of precisely the same strength as that which Dr. Elliotson recommended.

The ulcers have now lost all their cancerous character, and are assuming a healthy granulating appearance. His diet was nutritious, but no solid food allowed; and in the course of every day he drinks a tumbler full of good ale. Yesterday he rode out for an hour.

From the extraordinary effect of the creostote in my son's case, I am determined to try it on the next glandered horse that comes under my care; and I shall consider it a peremptory duty which I

\* To the letter which I received was appended one from Dr. Conolly, of Waterford, highly creditable to his candour and his talent.

owe to Dr. Elliotson and to you to acquaint you with its results. I beg you to tell that gentleman that I regard his discovery of the power of creostote in cases like this, and the kindness with which he immediately attended to my anxious request,—I beg you to tell him, that I regard these things with a deep feeling of gratitude.

To you, also, I offer my thanks, for having published in your valuable Journal the two cases, to the knowledge of which my son owes his life. I trust that this will be a stimulus to our profession to give a fair trial to the creostote in all cases of farcy and glanders, or diseases that appear to have the slightest connexion with them, that may come under their notice.

I am, &c.

[I beg leave to refer the readers of "THE VETERINARIAN" to p. 471 of the volume for 1838, in which they will find some interesting accounts of the successful use of the creostote in canker in the ear in dogs, in thrush in the feet of horses, and in gangrenous wounds generally; also in quittor in the horse and the foot-rot in sheep in Germany; likewise in ulcerated wounds, chronic diarrhœa, and hæmorrhage generally\*.

In France, the creostote has been successfully used in inveterate mange, in thrush, in obstinate fistulæ, and in caries of the bones, in horses. I will give, at length, a case of the successful use of it in internal hæmorrhage.—Y.]

CASE OF HÆMORRHAGE FROM THE URINARY PASSAGES CURED BY  
THE EMPLOYMENT OF CREOSTOTE AND THE SUB-CARBONATE  
OF THE PEROXIDE OF IRON.

*By M. LEVRAT. M.V.*

A HALF-BRED English gelding, eighteen years old, belonged to the Comte Sadjet, of Lausanne. He had been very hardly worked, both as a saddle and a draught horse. During the last five or six days he had voided several clots every time he had passed his urine. He ate and drank as usual, but he was evidently becoming weak. The owner, thinking it to be inflammation of the kidneys, desired me to see the animal, and to take with me some nitre, which he wished to be given to him, because, as he said, "the horse was too much heated."

Feb. 20, 1835, I examined the horse, which did not appear to

\* Journal Theorique, 1834, p. 350; and Rec. de Méd. Vét. 1835, p. 343.



me to have any serious illness about him. He ate and drank as usual. Although he flinched a little when the loins were pressed upon, the flank was very little tucked up, and not at all agitated. The eye was bright, the mucous membranes slightly injected, and the walk firm. A few drops of blood of a red vermilion colour were on the litter; they had a cylindrical form, of the apparent diameter of the ureter, and varied from five to eight inches in length.

The diagnosis which I formed in my own mind was, that it was an arterial hæmorrhage from the kidneys. Thinking that it might be produced by too stimulating food, and by the hard work to which the patient had lately been subjected, and also, I must confess, in order to gratify the wish of the owner, I began by administering three ounces of nitre every day, being divided into three drinks of thick gruel, and I also ordered absolute rest. Five days afterwards, a message was sent to me that the horse was considerably worse.

25<sup>th</sup>.—When I arrived at the stable, I found the pulse small, feeble, and accelerated. The mucous membranes of the eyes and the mouth unnaturally pale—the flanks tucked up—the breathing quicker than in health—the expiration forcible, and somewhat convulsive and the weakness so much increased, that the animal staggered and stumbled as he walked. The muscles were flaccid to the touch—the ears, muzzle, and extremities, were cold—the patient did not absolutely reject his food, but he masticated it very slowly: he continued to evacuate with his urine, which was little or not at all coloured, some clots of blood of a scarlet colour, and which, as I have already said, were moulded as if they had passed through the ureter.

My prognosis had little that was favourable about it, and, seeing the extreme debility of the animal, the Count proposed to have him destroyed. I entreated him to permit me to try a new medicament, which was spoken of as having produced good effect in cases of hæmorrhage. He consented.

The course which I had to pursue was sufficiently plain, viz. to arrest the hæmorrhage under which the horse was sinking, and to favour the formation of more blood. Then to the creostote, whose power of arresting hæmorrhage I determined to put to the test, I added the subcarbonate of the peroxide of iron. This I hoped might fulfil the second indication without interfering with the first. On the same day I administered three drinks, each of them composed of the water of creostote two ounces\*, the iron half an ounce, and half a bottle (a pint) of pure water. I placed compresses wetted with cold water mixed with vinegar on the loins, and

\* The Eau de Créostote of the French consists of 1½ part of creostote, and 100 parts of distilled water.

ordered gruel and bread for his food. While the first draught was administering the horse staggered against the partition, and would have fallen, if he had not been supported. He then trembled all over, and great difficulty of breathing ensued; this continued about a quarter of an hour, and gradually ceased.

26th and 27th.—The same treatment continued. The quantity of the clots of blood is diminished.

28th.—One drink only was given.

March 1st.—The quantity of blood has again increased, which I attributed to the diminished quantity of the water of creostote that had been given on the preceding day. Five ounces were now given in the three drinks, and the iron was continued. After each drink, a universal trembling came on, and the breathing was laborious; the horse also coughed a great deal.

2d.—There was an evident diminution in the quantity of the clots of blood and the frequency of their emission. The animal began to recover his former spirits—the trembling and difficulty of breathing no longer occurred—the pulse was more developed, and less accelerated—the membranes of the eye and the mouth began to recover their natural colour, and the appetite was good. As an experiment, five ounces of the water of creostote, diluted with water, were given in one dose, notwithstanding which there was a sensible improvement in the horse: the proprietor, however, wished him to be destroyed; but I prevailed upon him to sell the animal to me, leaving him the privilege of reclaiming him, on the payment of the charge for keep and medical treatment if he recovered.

3d.—The horse was led to my stable, being a distance of a little more than half a mile. It was with some difficulty that he travelled so far. We now administered ten ounces of the water of creostote in the day, divided into three equal parts, and three ounces of the sub-carbonate of iron daily; but this ferruginous preparation now beginning to produce slight diarrhœa, I added the powder of gentian to it, and with good effect.

The animal continued to void these clots of blood, but in less quantity, and in urine almost or quite colourless. I attributed this continued emission of blood to the violent concussion occasioned by the fits of coughing which followed the administration of every draught. A little honey was given to allay the cough.

4th.—Twelve ounces of the creostote were given in the course of the day, the iron being continued.

5th and 6th.—The same quantity administered.

7th.—Ten ounces were given in two doses. The evacuation of blood is daily diminishing. The iron is reduced to an ounce in the course of the day.

8th.—Nine ounces of the diluted creostote, without the addition of more water, were given at one dose.

9th and 10th.—Twelve ounces of the unmixed water of creostote were given.

11th.—The evacuation of blood ceased, and the creostote was no longer administered, but the iron was continued every morning suspended in gruel. The animal gradually returned to his oats and bread; and, on the 30th day after he was admitted into my stable, I had him harnessed, and drove him four miles and a half in a light chair. On the following day his owner claimed him, and exacted from him the same work that he had formerly done.

I have thought that this interesting case deserves attention on two accounts. The first is, the kind of hæmaturia, which must not be confounded with that in which the fluid evacuated through the urinary passage is highly coloured with blood, and of a uniform character. Here the evacuated urine was little or not at all stained with blood, and the clots seemed to have been moulded by the ureter through which they had passed.

The second object deserving of attention is the therapeutic action of the means which I employed—namely, the creostote to arrest the hæmorrhage, and the peroxide of the carbonate of iron to recruit the strength of the animal, and to induce the formation of blood.

*Recueil de Méd. Vét.* 1835, p. 337.

## THE DANGER OF DRENCHES.

*By Professor STEWART, of Glasgow.*

REPLY TO MR. MARKHAM.

IN THE VETERINARIAN for last November, Mr. Markham accused me of making him astonished and dismayed, because I had said that a bottle is a better drenching instrument than a horn; and of grieving him, because I had said that draughts are dangerous. In my reply I did not insinuate that his sorrow and dismay had no existence; but I endeavoured to shew that they were no argument against the truth of what I had asserted. In this endeavour, it seems, I have been successful; for Mr. M., in his last paper, abandons all defence of his first, *so far as I objected to it*. He labours to explain his motives for writing; but on them I had made no remark. It was, and is, quite the same to me whether he have one motive or twenty; whether he write from “the lively interest he feels in the onward progress of veterinary science,” or from fear that my assertions might compromise some practitioners who were in the occasional or frequent habit of giving draughts. Let him write to the purpose, and his motives will not be questioned.



He is surprised this time. He is "surprised to find himself attacked in the most illiberal and scurrilous way, with a mixture of contempt and malignity." The contempt is admitted, and therefore the malignity need not be denied, since no one can condemn and hate the same thing; that which is contemptible is too mean for malignity. The illiberality I cannot find; but if there be any, it may stand till I see some reason for generosity. The charge of scurrility would not, perhaps, have been made had the word been well considered. That he is not a veterinarian, Mr. M. himself "*candidly admits*," that he wants experience, ability, and comprehension, will scarcely be doubted by any one who has heard him urge his dismay and his sorrow as argument against the truth of a proposition. I have said no more, nothing but the truth; and that which is true cannot be scurrilous.

He says that the cases I have put on record are no proof that draughts are dangerous; for, had any portion of the mixture entered the lungs, the inflammation would "much more speedily have run its course."

Now, here is a man who denies the danger of draughts, and at the same time pretends to tell in what time a draught should produce death. Without experience himself, he yet assumes the license of contradicting that which experience has told others. If stupidity so arrogant be not contemptible, I know not what is. If a man disdain the report of another, how shall he know the effect of a cause? He must try it. There is no other way. Has Mr. M. tried to produce bronchitis by putting *any* portion of a pungent liquid into the trachea? Not he.

He begs "to ask the Professor, Did he attend those cases (that is, the third and fourth cases) previously to the drinks being given; and how it came that these horses were so scandalously neglected?" The Professor replies, that he never saw the third case till the day the horse died, nor the fourth till one day before death; and that in both he refused to undertake the treatment, because he knew of none that would do any good. Not knowing why the horses were so scandalously neglected, he cannot tell, and he thinks it needless to inquire.

Finding, rather too late, that he had written what he could not defend, Mr. Markham makes another attack. He assails a paper of mine, not published till two months after that which gave him such grief and astonishment. In the second paper I had asserted that "no man, take what care he might, would give to each of two hundred horses *a couple* of pungent or disagreeable draughts without producing bronchitis in seven or eight of them."

Mr. M. tells us that 127 horses took the influenza, and among them got 1600 draughts, of which *some* were pungent and disa-



greeable. He then declares my defence at an end, because none of these horses took bronchitis.

Before my defence, as he calls it, can be at an end, the conditions upon which the defence was undertaken must be complied with. Mr. Markham might easily perceive that 127 horses are not 200, and that *some* pungent or disagreeable draughts are not 200 couple.

I may yet be told that at least 25 of these horses each got a couple of pungent draughts, and that one of them ought to have taken the bronchitis. It is neither said nor implied that even 25 of the horses each got two pungent draughts, yet, if it were said, and proved, my position would still remain untouched. I have not contended for a proportion of 1 to 25, for there is nothing to determine whether the evil shall occur in the first eight draughts or in the last eight, but of eight to two hundred horses, each getting two draughts. I stipulated for *two* pungent draughts, because I have found the second most dangerous; and I stipulated for two hundred horses, because, from May 1836 to the time of writing my paper, I had that number of cases on record. All these had been treated for colic, and eight of the number had taken bronchitis.

If I were engaged to put into each of 200 targets *two* leaden bullets, I would do it before I would contend that it was done. Mr. Markham would put into 127 targets 1600 bullets, of which *some* would be leaden, "as I could desire;" and he would contend that he had performed the engagement. Such is the folly of one who "begins to dispute before he has learned to understand." He undertakes a task, and disobeys the conditions upon which the task is to be executed.

Mr. M. thinks I use terms which savour too strongly of the vulgar tongue. It seems perfectly clear that such things as "a practised liar," a skulking coward, and a canting hypocrite, exist, and that for each we must have a name. I neither made the names nor bestowed them on other things. It is not my business to invent genteel terms. Let those who object to them produce others more polite or less vulgar. In his next lucubration Mr. Markham will do well to give us *lady-language* for these vulgar words, and for some others, which I am afraid I will need, if he write more and no better than he has yet written.

He thinks I am "wrong in saying we are liable for the price of every horse our draught destroys," I have never said such a thing. I have contended that we are *not* liable, unless it can be shewn that we either gave a draught when it was not urgently demanded, or neglected measures to ensure its safe delivery. We can do something, but not enough to ensure safe delivery; and therefore we ought to forbear draughts when a ball will do, though it should not do

quite so well. For the past there can be no remedy. Whatever mischief draughts may have done, no man can be responsible. He does enough who forbears their administration, so far as he can, whenever he is aware of their danger.

Mr. Markham thinks that, even though draughts should prove dangerous, it is not quite kind to my pupils or to other practitioners to arm a discontented employer with such knowledge. I never said it was *kind*. I did not write to bestow kindness upon either pupil or practitioner, but to reveal a truth very important to both. If the employer learn it, and make an unjust use of it, his crime is not my fault. I published it where the profession would find it; not, as has been done, in a provincial newspaper, to be seen by employers, and untold to practitioners. The same objection, with the same weakness, may be made to the publication of every discovery. If any danger attend bleeding, balling, castration, neurotomy, or any other operation, he who discovers the danger and the way to avoid it must, according to Mr. Markham, keep the discovery to himself, in case any discontented employer should learn it, and find some cunning mode of oppressing his veterinarian. If such be not the caution of a man without knowledge and without courage, I wonder what dictates his caution.

Mr. Markham *thinks* once more. He thinks I lack civility and courtesy. In that thought he is not, perhaps, so far wrong as in some others. I have never aimed at either. The civility which would conceal or disguise vice by refusing it a name, and the courtesy which renders to impotence and ability, to villany and to virtue, the same homage, I despise very sincerely, and shall not willingly learn. I may confess to severity of expression without implying that I have departed from the truth. But I wish not to be cruel. Since Mr. Markham pants so fervently for a few civil sayings, he shall have such as I can grant without falsehood. He is a gentleman of such varied qualities, that one who is not acquainted with him may be truly unfortunate: he knows so much, that he is astonished and dismayed when he hears that another knows more; so courteous, that he would not term the villain vile; such a sincere admirer of veterinary science, that he is afraid its truths will not maintain their worth in opposition to discontented men; so hopeful to contribute a mite to its onward progress, that ignorance cannot delay his endeavours; in such haste to refute a proposition, that he overlooks its conditions; so eager to decide, that he determines before he understands, and refutes that which no man has asserted. He is nearly as good as an experienced veterinarian, having seen Mr. Mavor treat one hundred and twenty-seven cases of influenza.

## REPLY TO MR. WARDLE.

Mr. Wardle's remarks are in the last VETERINARIAN. He says that he has never experienced the danger of drenches; that drenches frequently accomplish what the ball would never effect; that the danger and difficulty of drenching are occasioned by the *fuss* that is made about it; that, when a superfluous number of awkward operators alarm or irritate the horse to resistance, the draught may produce "bronchitis, or any other evil, or death itself."

In reply, I have to observe that I know drenches will, in certain cases, produce a perfect cure where the ball is nearly or quite useless; that I have never said draughts are to be altogether prohibited; that I believe draughts are *more* dangerous in the hands of awkward operators than in those of the dexterous; but that I also believe bronchitis will occur in the practice of even the most expert.

Mr. Wardle says he has never experienced the danger, yet he is willing to admit the danger as probable when the draught is administered by bad operators. That is to say, there is no danger so long as the draught is skilfully administered. If this be true, we must abide the consequences. But if it be false, the veterinarian who maintains it to be false, and who gives draughts, will soon find that he must comply with demands not pleasant. Being told that draughts are quite safe when properly given, the employer will demand the price of the first horse he loses from draughts. In my opinion this would be unjust, but, according to Mr. Wardle's, quite fair.

There is a passage in Mr. W.'s letter about which I am rather incredulous. If he means to say, that he will give to any horse any kind of draught with perfect safety, and without assistance of any kind, his method would be worth learning, *provided he has told the whole truth*, that is, provided he does not twitch, cast, sling, nor trevis the horse. If he pretends to this, I am willing to give FIFTY POUNDS sterling to see it done. If Mr. Wardle will come to Glasgow, and do it before myself and other two veterinarians, and agree to forfeit that sum, and pay for the horses if he fails, I will present to him two horses, to each of whom he shall give two of my colic draughts from a pint bottle. Let him consider this, and write to me immediately by post, if he will agree to it. Let him not, like Mr. Markham, overlook the conditions.

## REPLY TO MR. DAWS.

Mr. Daws objects to the title of my paper, "Beware of Drenches." This gave me no consideration, for I did not think



the title a thing of much importance. If a better be devised, I am willing to adopt it. In other respects Mr. Daw's remarks are nearly word for word the same as Mr. Wardle's; and the answer which serves the one may serve the other. But, as Mr. Daws does not pretend to the same skill in drenching, he is not expected to notice the offer I have made Mr. Wardle.

My essays, he says, must be less positive and less caustic. I have always thought that an essay on such subjects could not be too positive. The statements should be directly asserted, not vaguely or negatively implied. But perhaps Mr. Daws means the *essayist*. Had *his* essay been positive, his meaning would have been plain.

#### REPLY TO THE EDITOR.

Mr. Youatt thinks the subject should now be dropped. I am content to forbear further opposition. Having said enough myself, I am determined to say no more. I am not of opinion, however, that the subject should be altogether abandoned. It has now obtained a little attention, and future observation, being more alert, may be able to confirm what I have advanced; and those who can should have an opportunity of doing so. It is very possible that I may be right, though others think me wrong. Indeed, when we consider how prone every man is to overlook events which he did not expect to witness, and how easily that is forgotten which is not understood, there need be no wonder that others have not come forward with confirmatory testimony. There is another reason. I have no doubt but there are practitioners who know the danger of drenching as well as I do, and yet remain silent, lest they should excite some forgotten suspicions of employers. The history of almost every science shews so often how opposition has been virulent without reason, audacious without strength, and confident without truth, that no man can be sure all is false which one believes and four deny.

Having stated my own experience, and shewn, as I think, the futility of all that has been urged in opposition, there is little more to be done. I might ask what evidence, after what has been said, would produce conviction? but I believe the question would not be answered. Since I wrote my first paper, I have met with another case. A horse, the property of Mr. Sim, of this city, took colic, and received a draught containing turpentine, oil, and tincture of opium, from his owner. The breathing instantly became so quick, that he was alarmed, and I was called. The horse recovered, but did not lie down till about the 15th day.

If such cases had occurred to others, and been misunderstood, we might expect to find some records of them in *THE VETERINA-*



RIAN. I have little time to spare; but I have made a hurried examination of the first ten volumes, and find some cases which I think no one can now read and misunderstand. I must allude to them; but I shall mention no names.

In the third vol., page 369, a mare took ill; got gin and pepper, and died: the lungs were black, and the pleura inflamed. The bladder had a perforation in it, through which the urine had escaped. I think the bladder was the first seat of disease, and that the draught produced the chest disease; but on this case I do not much insist. In the same vol., page 440, there is a very plain case described as "a complicated case of inflammation." About this I have no doubt; and by this time I should think the practitioner who attended it can have none either. In the seventh vol., page 648, there is another, equally plain, the chest disease not appearing till the day after administration of an astringent mixture in gruel. In the eighth vol., page 449, there is a fourth, which it is impossible to misunderstand. The symptoms are well described, and the whole case evidently detailed without the least reserve. The fifth, as related in the eleventh vol., page 542, is too recent to need specification. Let these records be read with attention, and let no man presume to say another word upon the matter till he has read them. If not sufficient of themselves to produce conviction, nothing will. The diversity in the symptoms arises, in my opinion, partly from the nature of the medicine, and partly from the quantity which enters the trachea.

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## DRENCHES ARE DANGEROUS.

*By M. POTTIE, Esq., of Yoker, N.B.*

THINKING that Mr. Stewart, my old friend and fellow pupil, would before now have met with some support from practitioners better known than I am to the profession, I have hitherto abstained from writing; but since no one seems willing or able to grant his demands, I can refrain no longer.

I have had reason to be fully convinced that draughts are dangerous; that we cannot wholly avoid the danger; and that we should never give them except when life is at stake. I speak of horses only, for cows are little the better for solid medicines; but they are not entirely exempt from the danger of draughts. My experience has not been such as to enable me to say whether draughts are more or less dangerous if given when the horse is lying; but I seldom give or order them *to horses* except for diseases which make them lie.

I cannot tell how many draughts I may have given to horses, but I am quite sure that I have lost three patients by them, and perhaps more, for a thing is soon forgotten while it is not comprehended. So far as I can remember, the first case occurred in 1837. The patient was a draught horse, who had taken colic, and I was called to treat him. I gave a drench composed of turpentine, tincture of opium, and oil. The horse resisted, and was twitched, a part of the operation I will not again perform. He coughed immediately. The colic was cured, but the breathing became very quick, and the horse died in two days, standing till he died. The lungs were deeply inflamed, and the bronchi full of froth.—The second case happened in the spring of 1837. It was a draught horse, attacked with colic. He got the same drench as the other, but it produced no relief, and had to be repeated in less than an hour. He coughed violently; the colic disappeared, the breathing quickened, and in ten days the horse was dead. His lungs were full of abscesses and tubercles; the pleura was intensely inflamed, and the chest half full of water.—The third case took place last May. The horse took colic very acutely, got a strong drench, and was almost immediately cured of the colic; but his breathing became so quick, that I could not count it. The horse died in six hours. I could not get an opportunity of examining the body.

I have lost no cows, so far as I know, in this way; but I have heard of three. Two of them died almost immediately. The other fell while getting the medicine, and died in about twenty minutes. I rather think that precaution is of more avail in the drenching of cows than of horses. In both, there is a right and a wrong way; but in horses we cannot always do it in the right, at least in the safe way.

## STRAY PAPERS ON VETERINARY JURISPRUDENCE, INCLUDING MEDICAL ETHICS:

ADDRESSED TO VETERINARY STUDENTS.

*By* THOMAS WALTON MAYER, *Esq. V.S., Newcastle-under-Lyne.*

“By proper reflection, we may amend what is erroneous and defective.”

Gentlemen,—ACTUATED by feelings of no common character for the advancement of that science with which it is our mutual interest to become perfectly acquainted, and to which we have devoted ourselves; and being also fully convinced that there is

no part of it more neglected than veterinary medical ethics and jurisprudence, I trust you will pardon my addressing to you a few remarks on such an important subject.

The subject will appear of greater importance to you on reflection. For I have only to refer you to the records of our courts of justice—the events that are almost daily occurring in the experience of some of us—the conflicting opinions that exist with regard to almost every point of veterinary jurisprudence, and the disjointed, dismembered state of this branch of veterinary science, in order to prove to you, much more strongly than I can express, the obligation that rests upon you to acquaint yourselves thoroughly with it.

My friends! you, who are about to act on your own responsibility, and to mix in the throng of public and private practice—who have to make your way in the world—you will soon experience the loss of that information, and the benefits of those first principles, which should have assisted you in coming to direct conclusions; which should have enabled you to give decided opinions on differences of structure, and the capability of animals to perform the labours or the duties that are required from them; and which, also, should qualify you to perform the most important part of your duty to your employers—the preventing of them from running into unnecessary and expensive litigations. You will then feel the cogent and eloquent language of one for whose labours we ought all to feel thankful, and who on one branch of this subject, at least, has left on record a clear argumentative statement of an opinion which alone would prove him, if proof were wanted, one of the greatest benefactors of our art, and convince you that it is necessary, for your own credit's sake, that a greater portion of your time should be devoted to inquiries connected with veterinary jurisprudence. “It therefore behoves the veterinarian to arm himself at all points; and not only for his own individual reputation, but for the respectability of the profession altogether: for what scene can be more derogatory—what more disgraceful—than one where two respectable members of the same profession are seen evidencing—ay, and swearing too—in direct contradiction the one to the other? What (he goes on to ask) can this arise from, but a want of some mutual understanding and explanation? What can remedy it, but the cultivation of a branch of knowledge which has been, greatly to our own discredit, almost totally neglected, viz. veterinary jurisprudence?”

Ten years have nearly elapsed since this paragraph was written; and is the stain yet wiped away? or rather is it not more deeply and indelibly fixed? Do the events of the last few years teach no useful lesson, and administer no just reproof? Look at the

records of veterinary jurisprudence in this Journal alone since its commencement to the present time ; and you will at once see the correctness of the foregoing remarks, and the importance of the subject. These two things being, I think, self-evident, the quotation that has just been made suggests the following ideas :—first, a cause ; secondly, a remedy.

What is the cause that such conflicting opinions exist on the several subjects connected with veterinary jurisprudence, and that it remains in such a lamentable state ? Ask the lawyer—ask the sportsman, or the veterinary surgeon. Some will tell you one thing, and some another. It is not the want of law, it is not the want of justice ; it is, as Mr. Percivall pithily expresses it, “it is the want of some mutual understanding and explanation among ourselves :” or, as I have elsewhere expressed it, the fault rests with the profession at large, and with them, and them alone, the cause originates.

Passing events every day more and more convince us that something must speedily be done in order to bring about a “mutual understanding” amongst the profession. Hence we are led to consider a remedy. No remedy that I can suggest to you is better than that given to more advanced students—“*Cultivate Veterinary Jurisprudence.*”

To impress this axiom upon your mind, and to endeavour to bring into one connected chain the different links already formed, and which may, in some measure, serve you in your investigations on this important subject—this is the intention of the following papers. Nevertheless, I am not presumptuous enough to expect that any ideas of mine, or any opinions I may heap together, will be of sufficient importance to rank as the opinion of the many ; nor do I flatter myself that they will effect so desirable an object as that of producing “mutual understanding” and explanation amongst ourselves. Yet doubly gratified shall I be if any thing that I may state should be of service to you, or assist you in your onward career.

For the cultivation of any system of veterinary jurisprudence, it is *absolutely necessary* that you should make yourselves acquainted with the different parts of the healthy animal. You will then be able to detect the variations of structure, and, by carefully noting the gradual or sudden changes in the organic system, you will insensibly attain an accurate knowledge of diseased parts and morbid growths and altered secretions. You must likewise ascertain the tendency of these deviations from natural form and structure either to destroy life or injure the functions of the part.

Much of this you may learn from the means at your disposal, or from the experience of others. You become, by degrees, conversant with the various stages from health to disease, the symptoms by



which they may be distinguished, and the probable termination. It is, moreover, necessary that you should understand (in some degree at least) the nature and effects of the different mineral and vegetable poisons; their antidotes; the tests by which they may be distinguished, and their effects on the animal frame. Without this knowledge you cannot be said to have been qualified to practise the "veterinary art;" nor can you be competent to give an opinion on many points on veterinary jurisprudence.

Presuming that you are, in some measure, acquainted with these important parts of your education, I propose to direct your attention first to Veterinary Medical Ethics, or the duties that relate to yourselves, your professional brethren, your employers, and your patients. If "mutual understanding" is to take place amongst us, you will see that the consideration of these duties constitute by no means the least important part of our subject, and that it will form not an inappropriate introduction to the second division of our subject, Veterinary Jurisprudence. We may then conclude with some practical considerations for the mutual benefit and advantage of us all.

Having thus laid before you the plan that I propose to adopt, I shall, in the next number of this Journal, commence the subject of Veterinary Medical Ethics. And here I trust that I may be allowed to say one word as a caution,—Guard against adopting any party prejudices, or being swayed by any preconceived notions on these important subjects. Let it be your especial aim to ascertain the correctness of all that you hear or see, and then "hold fast that which is good."

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## ON THE USE OF THE HYDRIODATE OF POTASH, AND ON TOBACCO ENEMATA.

*By S. V. GREGORY, Esq. V. S. Sherborne.*

IN THE VETERINARIAN for this month, I see that Mr. Wardle advocates the use of the hydriodate of potash in bony depositions. Having used it extensively for several years past, both as an applicant externally and a medicament internally, the few following cases may not be unworthy of notice.

This brings me, in the first place, to make a remark on hereditary disease. J. Doddington, Esq. of Horsington, for some years past had a stallion called Hercules, a well-bred horse, of amazing power and strength; but his hocks were spavined and curbed, and otherwise ill-formed, and he was of a very vicious temper. He was

shot last year, but has left a great number of colts in this neighbourhood—pretty—fine horses generally—but I think I am speaking within bounds when I say that four out of five have either curbs or spavins, or both ; but as they are young yet, curbs seem to abound. Nearly as many, in proportion, are bad-tempered brutes.

I have consequently been called upon to treat a great number of curbs, and have, in almost every case, succeeded in removing them by the use of the hydriodate of potash. The form which I consider best is to mix one drachm of it with seven drachms of weak mercurial ointment for young horses, and for old horses I use the strong mercurial ointment. Let two or three drachms of the ointment be well rubbed into a curb or a thickening of the sheath of the flexor tendons, and let the horse take his accustomed exercise. In curbs or thickening of the sheath of the flexor tendons I always have the heel of the shoe raised. By these means I have effected a cure in cases which used to be considered hopeless, without the firing iron.

I have also used the hydriodate of potash in various enlargements of glands and other parts. In one case of a rupture of some of the fibres of the suspensory ligament, at its insertion into the internal sessamoid bone, I made two or three deep strokes with the firing-iron, and then applied the ointment daily for a fortnight, with very considerable advantage.

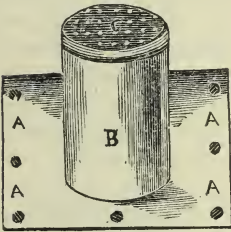
Three years ago a gentleman brought me a fine Hercules mare colt, that had two very large curbs. He said he would have her fired, and no one should persuade him out of it ; but at last I prevailed on him to try what the ointment would do, telling him if it did not effect a cure I would not charge him for it. The ointment was had, and properly used ; and in three weeks there was no enlargement left. The mare was ridden as usual during its application ; but, of course, rest in a large loose place would have been preferable. She was sold at Oxford last year for 70 guineas. Had she been fired, she would have been at once reduced to a stage-coach mare. I have not yet tried its effect on spavins, but will on the first opportunity.

Last July I had a five-year-old horse sent in from the country, about five miles : he had large swellings, that had risen up suddenly that day, over various parts of his body, about the form and size of a common plate turned upside down. One eye was nearly closed, and the lips and cheeks very much swollen. The pulse was 70, and small, and the membranes of the eyes, nose, and mouth very much injected. I bled him at once, and before I had taken five pounds of blood he was very much distressed, and I thought would have fainted. The neck being pinned up, he had potass. hydriod.  $\mathfrak{z}\text{ij}$ , and sulph. magnes.  $\mathfrak{z}\text{iv}$ , given him, and repeated every three hours. The

third dose, which was all that he took during the day, produced a plentiful discharge of urine. On the next morning the swellings were gone, and he appeared quite recovered, and went home.

I have used it with the best effects in cases of sudden swelling of one of the hind legs, and infiltration of the cellular membrane of that limb, giving it twice a-day in two-drachm doses, combined with the sulphate of magnesia and a little ginger; at the same time bleeding, bathing the limb with hot water, and using the other usual means.

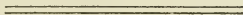
I have often wished, when attending some cases, that I had a contrivance for giving a horse a tobacco-smoke enema; but the price and, what has been a greater obstacle, the magnitude of the tobacco bellows, have prevented my purchasing one, as it would be exceedingly inconvenient to carry about. But lately I have hit upon a very simple and portable contrivance, and one that may be put in the pocket; and as you can get a pair of common bellows at every



house, it is at all times at hand when wanted. A A A A is a plate of copper or brass, on which the box B is brazed, that will hold half an ounce of tobacco. C is the cover of the box, pierced with holes, and the part of the plate which forms the bottom of the box has also holes in it. The plate is three inches square, and has three holes on each side, to receive the tacks by which it

may be fastened over the valve of any common pair of bellows, having a piece of cloth between the plate and the bellows. When the tobacco is lighted, put the cover on, and if properly applied to the bellows, no air can get into them except through the tobacco. It will act precisely in the manner of a person smoking a pipe. Having all things arranged, introduce the pipe of the bellows into the anus of the animal, and you may give him as much tobacco-smoke as you please. The cost of the box should not exceed eighteen pence.

Having now occupied a considerable portion of your space, I have but one remark more to make, and that is, to inform Professor Stewart, that we do not find either danger or difficulty in giving horses drenches in this part of the country.



## A CASE OF CALCULI IN THE KIDNEYS OF A COW.

By JOHN TOMBS, *Esq. V.S., Pershore.*

*July 5, 1838.*—I WAS summoned in great haste to attend a beautiful, thorough-bred, long-horned cow, the property of a gentleman in this neighbourhood. I found her breathing laboriously, with a quick pulse, extremities and horns rather cold—refusing food and water—having ceased to ruminate, and frequently lying down and groaning. On inquiry, I found that she was seen by the shepherd, early yesterday morning, rolling about, kicking her belly with her hind feet, and, when free from pain, eating dirt. She had been stall-fed in the winter, and had been turned out in a luxuriant pasture about six weeks. She must have been in extreme agony yesterday, for the grass where she rolled had been forced into the earth, and she had knocked a post and rail-fence to pieces with her tremendous horns. As soon as her illness was discovered she was housed, bled to two gallons, two pounds of Epsom salts were given, and injections were administered. To-day I recommended a farther abstraction of blood to the amount of four quarts—the extremities to be well rubbed—another pound of the Epsom salts to be administered, and the enemata to be continued.

*6th.*—No perceptible alteration. She frequently stretches herself—lies down frequently—the respiration is embarrassed—the rumination suspended—refuses her food and water: the pulse 80. I had her turned out, to see whether she would graze; but she began immediately to eat dirt. She was bled to syncope. I then, as the bowels had not been opened, gave her sulphur, aloes, and Epsom salts, and drenched her with linseed tea.

*7th.*—Very little change—the bowels still constipated—medicine as before.

*8th.*—Bowels relaxed, and no mucus mingling with the fæces. Pulse 90, and weak. She is still frequently stretching herself. Give her gruel plentifully—she has not had much of it yet, on account of her struggles against being drenched.

*9th.*—Pulse still 90, and weak. She lies down and moans, and is evidently suffering acute internal pain—fæces of a natural consistence—she voids her urine frequently, and it is mingled with mucus and purulent matter. In a quart of urine there are two or three ounces of pus. Give her opium, gum acacia, and carbonate of soda, and drench her with plenty of linseed tea.

*10th.*—She appears to be somewhat better—pulse not quite so rapid—she has eaten a few elm and cabbage leaves. I had her



turned into a grass-field. She grazed for a few minutes, and then began to eat dirt most ravenously. Medicine as yesterday. I am afraid to repeat the bleeding, for she is very much debilitated.

11*h.*—Decidedly worse. Half of her urine consists of mucopurulent matter mixed with coagulated blood. She has since yesterday voided several pieces of coagulated mucus, more than an ounce in weight. The pulse is 90, and somewhat strong; and she will scarcely touch any food. I examined some of her urine that was caught in a vessel, but could not detect any sabulous sediment. As I stood by her she was attacked with violent apparently-gripping pains. She repeatedly turned round—looked back at her flanks, kicked at her belly with her hinder feet—stretching her hind legs out—first the one, and then the other—crouching with her hind parts until her hocks nearly touched the ground—then switching her tail violently, and crossing her hind legs. These symptoms after awhile abated, and then she lay down and snored for a few minutes, after which she got up again, and began to graze in a most voracious manner. I once more bled her copiously—administered enemata, and gave her aloes and gum acacia, for her bowels were again confined.

12*h.*—It appears there was a return of the same strange exacerbation of symptoms after I left her. She is now apparently easy—eats and drinks a little, and has ruminated for the first time since she has been ill. The legs and ears are warm—there is a fine dew on her muzzle. The fæces have their natural consistence and character. The urine is still mixed with mucus, but it is voided less frequently. The pulse is 70. Give her linseed tea with opium, and also aloes, to prevent costiveness.

13*h.*—Late on the last evening she again manifested excruciating pain, and moaned, and rolled about for more than an hour. This morning she is comparatively tranquil. She is more inclined to eat than she has been since the commencement of her illness. The pulse is 72, and the urine no longer mingled with mucopurulent matter. Give opium, sulphate of magnesia, carbonate of soda, and gum acacia, with plenty of diluents.

14*h.*—Pulse 65. Eats and ruminates, and is more lively. Continue medicine.

16*h.*—Suffers very little pain—pulse 60—appetite improved—the irritability of the bladder apparently diminished, but the old mucopurulent matter is again appearing, and clots of coagulated blood are expelled with the urine. Continue the same medicine and treatment.

17*h.*—Pulse 50. Exempt from pain, but the same appearance of the urine. Still continue treatment.

19*h.*—Apparently free from pain—feeds and ruminates well,

but the urine continues the same. I fear that this is a treacherous calm, for her symptoms too plainly indicate the presence of a calculus in the pelvis of one of the kidneys. I have examined the bladder, *per rectum*, but there was no calculus there. She has also a great disposition to eat dirt still remaining. Reflecting on this, and she still continuing in fair and good condition for the butcher, I advised that she should be slaughtered. The owner unhesitatingly complied with my request.

*Post-mortem appearances.*—The contents of the thorax were perfectly healthy. The stomachs, intestines, spleen, omentum, and liver were also sound. The adipose membrane covering the surrounding fat of the kidneys was inflamed. There was considerable absorption of the adeps, which had a flabby tallow-like appearance. The investing membrane of the left kidney was highly inflamed, and the kidney itself considerably enlarged. Patches of inflammation appeared on the cortical portion of its anterior lobes. The pelvis of this kidney, when cut into, was found to be filled with purulent matter and sandy concretions. The whole of the tubes of the kidneys contained pus of different colours—some being of a pink, some having a yellow hue; but being of a thick and tough consistence, somewhat resembling the white blood found in the heart and large bloodvessels after death from inflammation of the lungs. The tubes of the kidney, before terminating in the ureter, were very much enlarged in calibre.

The calculi found in the pelvis of the kidney weighed about half a drachm. They were of an irregularly formed porous character, and of a sandy consistence—the outside of a deep, and the inside of a light brown colour, and varying in size from a pin's head to a horse-bean.

The ureters were greatly enlarged and thickened, and contained some deep brown thick matter.

The peritoneal coat of the bladder was considerably inflamed. The villous coat was inflamed, thickened, and thrown into rugæ. The mucous coat of the inferior part of the bladder was studded with scirrhus excrescences, some as large as a pigeon's egg, and all firmly united together, and covered with a thin vascular membrane. They were shaped like the excrescences in the greasy heels of horses. The ovaries were diseased, which is frequently the case in cows that have borne several calves.

The right kidney I did not examine, the butcher objecting to it, having sold it with the loin. It could not have been in so bad a state as the other, for the fat looked healthy, and the whole was of the ordinary size. The ureter however, diseased, and containing some purulent matter, was clearly seen.

The proprietor assured me that the cow had been apparently

healthy, until the day previous to my seeing her, when she commenced eating dirt. If the sabulous matter that she ate began to assume a calculous form in the pelvis of the kidneys in so short a time, it is completely contrary to the theory generally entertained of the formation of calculi in the urinary organs.

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[It is singular that we have no history upon record of the symptoms of the existence of renal calculi in any of our patients except the dog. Several museums contain specimens of calculi from the kidney of the horse, and of a very considerable size. In Mr. Ainslie's there is one weighing more than six ounces, and it is evidently a fragment of a larger one. Another is perfect. It occupies the whole of the pelvis of the kidney, which is preserved with it. It weighed twenty ounces. I bought this beautiful specimen from one of the knackers, but could not obtain any account of the symptoms during life.

M. Rodet, junior, while Assistant Professor at Alfort, relates a case in which numerous small calculi, like those described by Mr. Tombs, were found in the kidney of a mare. She was fourteen years old, had been worked very hard, and had never had any symptoms of colic, or affection of the urinary organs. She met with an accident which eventually destroyed her. A great deal of abdominal inflammation had been caused by the accident; but the left kidney was particularly inflamed, and was fully one-third more than the usual size. In the pelvis was a mass of yellow muco-purulent matter, and likewise a considerable quantity of small calculi, varying in size from a coarse powder to the bulk of a lentil. The mucous membrane of the renal pelvis was thickened, hardened, indurated, of a deep yellow colour, and traversed by some capillary vessels injected with blood. The calculi, when washed and dried, were of an irregular form, rough, porous, of a grey-yellow colour approaching to brown, and totally destitute of smell.

The right kidney was perfectly healthy\*.

The total absence of pain, compared with the dreadful tortures of the cow described by Mr. Tombs, is singular, especially considering the enlargement of the kidney.

M. Lautour gives a case of renal calculus in a dog. The patient was an old Danish dog. During three or four years he had occasionally voided his urine with some difficulty, and he had walked slowly and with evident pain. He was sometimes better, and at other times worse; but during the asparagus season, and when he was always obliged to eat a considerable quantity of that vegetable, he evidently suffered less pain.

\* Journal Pratique, 28, 178.

*Aug. 20, 1827.*—A sudden exacerbation of the disease came on; the dog was dreadfully agitated—he barked and rolled himself on the ground almost continually—he made frequent attempts to void his urine, and which came from him drop by drop. When he was compelled to walk, his hind and his fore legs seemed to mingle together—his loins were bent into a perfect curve—he could scarcely be induced to eat—his flanks were drawn in, and he appeared to suffer very much in voiding his fæces. Milk and demulcent liquids were his only food; warm baths and injections were used, and in six or eight days he regained his usual habits and state of health.

*Mar. 13, 1828.*—The symptoms returned with greater intensity. His hind limbs were perfectly palsied, and dragged after him—he lost flesh with strange rapidity, and his howlings were fearful and continual.

The same mode of treatment was adopted; but there being very slight improvement after five or six days had passed, and his cries continuing, he was destroyed.

The stomach and intestines were healthy—the liver was of a marbled red colour, and easily torn—the mesentery in some places, and particularly near the sub-lumbar region, was indurated, and of a purple hue. The bladder appeared to be enlarged, not from the quantity of liquid which it contained, but the thickness and induration of its parietes, the opposite sides of which could not approximate. Its mucous membrane was thickly covered with ecchymoses, the extent of which varied from a pin's point to the size of a thumb. The kidneys were nearly three or four times their ordinary size. Inclosed in the pelvis was a calculus of an irregular form, weighing twenty-six grains. The substance of the kidneys presented scarcely any trace of their original structure. The calculus was analysed, and contained

Uric acid .....	58.0
Ammonia .....	30.8
Phosphate of lime.....	10.1
Oxalate of lime.....	1.1
	<hr/>
	100.0
	<hr/>

The substances that are found in the vesical and renal concretions of the human being are often found in those of the dog. The composition of these concretions in the carnivora is more varied than has been thought, depending on the organization and the food of the animal, and the fluid which is the base of the concretion. Some of our correspondents will probably throw a little light on the subject of renal calculi, the mode of their formation, and the symptoms of their existence.]

Y.



## ON PROFESSOR COLEMAN'S PECULIAR DOCTRINES.

*By* CHARLES CLARK, *Esq. V. S. London.*

"I AM come to learn, and not to teach," was Mr. Edward Coleman's modest declaration when first inducted as resident Professor at the College. This remark was directed by him to some of the elder pupils of the first Professor, St. Bel, who had been conducting the business of the establishment and the infirmary for several months since his lamented demise, both with credit to themselves and advantage to the institution. But a recognized superior was absolutely necessary; and, depending upon the known veterinary skill and experience of Mr. Moorcroft, who had consented to fill the office of Senior and Consulting Professor, the committee of management were ready to avail themselves of the services of any aspirant, of even moderate pretensions, in a situation which was then neither lucrative or desirable. Such an admission must have appeared particularly befitting and proper in the case of a young surgeon like Mr. Coleman, who thus found himself transmuted from a limited practice in Palsgrave Court, in the Strand, to the situation of professor of the veterinary art, for which he was very slightly qualified, either by habits, taste, or previous experience. It is well known that the interest of his late teacher, Mr. Cline, and other medical friends, sufficed to procure him the appointment; and also that Mr. Moorcroft shortly after ceased his attendance at the new College, either from inability to coincide with the theoretical views of his colleague, or from the pressure of his private business in Oxford Street. Passing on at once to this period, we find Mr. Coleman suddenly placed at the head of the first and only school in England for the cultivation of veterinary science. Enough had already been done in the three preceding years to give a name and existence to our art, and to place it side by side with the medical profession. So delightful and interesting in itself, and so eminently useful to the public, it was impossible that it could again revert into the hands of the illiterate farrier, or that any obstacle could seriously or entirely obstruct its certain onward march as a liberal science. Mr. Coleman found a spirit alive in the minds of St. Bel's pupils, Messrs. Bloxam, Bracy Clark, R. Lawrence, Field, Bond, and others, which would have prevented such a result, although I believe he himself was once far from sanguine respecting the triumph of the veterinary surgeon over vulgar prejudice and time-honoured errors. He was, however, a professor; and, as such, something might be expected from him, in order to vindicate and jus-

tify his claim to public favour. How unfortunate is the position of that man who is called upon to express a decided opinion on a subject with which he is unacquainted, or, speaking shortly, is compelled to lecture on horse affairs, having no knowledge of them; if cautious and candid, he will betray his ignorance; but if imaginative and plausible, he will at once adopt some specious theoretical ground, trusting to his own ingenuity and the inexperience and confidence of his auditors.

This latter plan is rendered especially easy, when, as in this case, the subject is but little understood, and the teacher stands alone, without a single rival lecturer to contravene what he may choose to assert, and when, moreover, the pupils are so far dependant upon his personal approbation as to be deterred from putting forward a contrary opinion, or even questioning the correctness of what they hear. Accordingly, we very soon find Mr. C. forgetting his humble declaration on entering the College, and, without allowing himself time to learn much from practice, he at once began to adopt and promulgate a set of theories and new doctrines, the chief of which he has blindly persisted in for near half a century, unchecked by their general failure in the hands of his pupils, and equally regardless of the voice of a large majority of reasonable horsemen and the refutations they received from his contemporaries. But, after thirty years passed with little alteration in the doctrines he had disseminated, the powerful instrumentality of a periodical press was awakened, and its sharp strictures have now, at length, effected some improvement, both as regards the opinions taught at this institution and its general management as a veterinary school. I propose to leave out of sight every consideration bearing on the political conduct and character of Mr. Coleman's establishment towards the pupils and the public (although these are subjects requiring the strictest inquiry), and to confine myself chiefly to the description of those leading dogmas, whether written or oral, which have emanated from the chair during his long occupation of it. The Professor's peculiar views on the subject of the foot and shoeing stand foremost in erroneous magnitude; but as the preface has made this paper already long, I shall now only notice his theory respecting the treatment of "inflammation of the lungs," namely, the *exposure-to-cold system*, as it has been exhibited in the comfortless sheds of the College, and practised with fatal loss by many a young veterinary surgeon in the outset of his career.

The axiom upon which he founds this chilling theory is as follows:—"that catarrh, and also inflammation of the lungs, is not so often a consequence of changes from heat to cold as from cold to heat;" ergo, a very low temperature, amounting to an exposure to cold air, is the best atmosphere in such cases. The assumption

with which he sets out is only true in part; but without entering into all the phenomena and circumstances which attend what is commonly called *catching or taking cold*, whether in a slight or serious degree, we may observe, that the causes of inflammation of the lungs are very various, and often opposite; but admitting that its proximate cause may have been a heated atmosphere or over-exertion, why should we therefore expose our patient to the very reverse by way of remedy. The lungs are now (be the cause what it may) in a diseased state, overloaded, and exceedingly susceptible; and in order to their relief, the most important object, after proper active treatment, is to encourage and determine the circulation of the blood to the surface of the skin and extremities of the body. In spite of warm clothing, a very cold atmosphere completely checks these desirable indications, and at the same time irritates the inflamed and tender mucous membrane of the respiratory organs in an injurious manner. There is a common-place truism brought in to back the former, and in frequent use at the College, that "*cold is a direct sedative*:" but does it follow that its application in these inflammatory cases is justifiable by sound philosophy? I am not defending very hot stables, or denying that they may often occasion this disease; but neither the truth nor the antidote lie in a recourse to the opposite extreme. The doctrine itself is pernicious, but its abuse is much worse still. Cold air must be had, says the Professor to his class; but a shed or a loose box is not always obtainable for their patients; and then, what is to be done? Why, to open the doors and windows is the practice, and allow a cold draft to stream upon the poor animal, whose skin is much more sensitive than our own, and who is, besides, unable to remove aside, or protect himself from its baneful effects.

Not only has no proper distinction been drawn by Mr. C. between an elevated roomy stable and this current of cold air system, but he formally recommends the latter, so that a hole in the wall directly overhead, and another behind each horse, is the basis and manner of the boasted *improved ventilation* for which he has taken credit in the army stables and elsewhere.

It is impossible to imagine the number of valuable horses which have been sacrificed by the adoption of this thorough-draft principle in confined stables, where its effects are most severely felt; yet has the theory been urged on successive pupils for forty years, without check or rebuke of any kind, unless it be that, after multiplied proof of its fatal results, it is silently discontinued by observing practitioners. These will, I think, agree with me, that a cool still atmosphere is desirable, but that these currents of cold air



carry death; and considering the great frequency of pneumonia and bronchitis in horses, the truth or fallacy of a doctrine which has been so extensively promulgated is surely a subject of the highest importance.

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## CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

NO. XXII.

*By Mr. YOUATT.*

### PNEUMONIA AND PHTHISIS. TWO TIGERS.

THESE animals were apparently well on the 16th of January, 1839. Beautiful creatures they were—the coat sleek—the eye bright—in high condition, without being over-fat, and not one circumstance to engender suspicion.

On the 17th, in the morning, the tigress had cough—the act of coughing was evidently painful—her coat stared—she heaved at the flanks—the countenance was depressed—the muzzle, although not hot, was dry, and considerable fever evidently accompanied the cough. Give her three grains each of calomel and antimonial powder, and put her on short commons.

18th.—The bowels have been opened—the fæces have a bilious character, and are very offensive. The expression of her countenance is worse, and she heaves quite as much as, or more than yesterday. Repeat the medicine.

19th.—The medicine has operated, and is still operating—the cough is not so violent, but the heaving at the flanks is fearfully increased. There is evidently acute inflammation of the lungs: and, painful experience in former years having convinced me that this too soon becomes connected with tuberculous disease or hastens the appearance of it, I was anxious to accomplish, if possible, a double object. I therefore determined to attack the pneumonia by constant purgation, and to check the progress of tuberculous development by the iodine. She was now purging, and I prescribed three grains of the iodide of potassium morning and night. Bleeding was out of the question—even Van Amburgh could not effect it. This purging continued three days, and was then recalled by the calomel and antimony, until she began to refuse both this and the iodine, which was after about a fortnight. The purging was kept up a few days longer by olive oil in fat broth: when that failed, an ointment of calomel was rubbed on her paws; but this she discovered at the expiration of two days. The mercurial ointment



was then had recourse to, but she was once only deluded by that ; and, at length, scarcely losing condition, but refusing all food occasionally, and at other times taking a small quantity only of that which she had most scrupulously examined—the fits of coughing increasing in violence, and the labour of respiration likewise increasing—she died on February the 15th. The struggles of death were said to have been exceedingly violent. A considerable quantity of blood ran from her nostrils.

There was not a vestige of disease in the abdomen, but the lungs were in a dreadful state. The greater part of them was filled with tubercles, from the size of a millet-seed to that of a pea. The bronchi and the air-cells were filled with a frothy, bloody, purulent matter. When the substance of the lungs was cut into, a reddish grey purulent fluid issued from every minute orifice. There were four distinct small vomicæ. Each of them would hold nearly a drachm. Between the integument and the parietes of the abdomen was a very considerable deposit of adipose matter, and still more within the abdominal cavity.

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On the 18th of January—the day after the female became ill—the tiger, her constant companion, began to cough, and heaved almost as violently as she did. There was the same appearance of pain and depression, the same pitiable countenance. He, too, was purged with the calomel and white antimonial powder, and, the bowels having been well opened, the iodine followed.

Although the heaving at the flanks was as great as hers, he retained more strength ; and I believe that he would have eaten quite as much as when he was in perfect health. His bowels were kept constantly relaxed—the iodine was never omitted, and, occasionally, mercury in various forms was rubbed on his paws.

There was a great deal of deception about him, and he, now and then, half persuaded us that he did not mean to die.

We kept these animals together, because they were then quieter and happier : but it was pitiable to see him during the death struggles of the female. He hung over her, uttering the peculiar sniff of feline attachment, and tried to turn her over with his paw ; and when she was carried out of the den he watched her to the door of the repository, and then raised himself against the grate, to try to get another glimpse of her. At length, when she returned not, he lay down and buried his muzzle up to his eyes between his paws, and moved not, and could not be induced to move, for more than an hour. He then got up, walked a few times round his den, and neither his countenance nor his manner seemed to express that he thought any thing more about her.

The examination of the tigress having shewn that her disease

was essentially phthisis, I determined to push the iodine to its full extent, especially as no lesion had been left in the stomach or intestines of the female. The dose was accordingly increased until it reached twelve grains morning and night, which he regularly took. Sometimes he rallied, but at other times the labour of respiration was dreadful, and he threatened to die every minute. He lingered on until the 28th, and then he died. His death struggles were fearful, and there was a considerable discharge of blood and pus from the nose.

On opening the abdomen, there was no appearance of disease beyond a *slight congestion of the liver*; but on cutting into the stomach, there appeared an inflammation and softening of the mucous membrane, and extending into the duodenum, more intense than I have been accustomed to see in phthisis, and which I am inclined to attribute, partly at least, to the iodine. It had nothing to do with the death of the animal; but it indicated that we had pushed the iodine quite far enough.

The lungs were almost universally hepatized. It was wonderful that the process of respiration was carried on at all. In some places there was a dense substance of a mottled, marbled appearance; in others, the bright red of the hepatization shewed that it was of very recent formation; in others, the process of decomposition had commenced, and there were caverns, one of which would have held four or five ounces, and which contained a black and putrid fluid. There was one large hydatid embedded in the lung, that contained at least six ounces of fluid. *There was not a single tubercle*—not even the minutest granulation—and the pleura was comparatively slightly affected: certainly there was no adhesion.

Then what was the character of the disease in these animals? There was, at least, a predisposition to phthisis. If the tubercles did not exist in the female prior to the inflammatory attack of the lungs, they were produced very soon afterwards. In the male, perhaps the iodine contributed to prevent their development, for the caverns which were found in the lungs very much resembled those which I have been accustomed to see in old tubercular affections.

The inflammation of the lungs may, perhaps, be in some measure accounted for. There are occasionally, by some or other of the numerous animals which that repository contains, some villainous compounds of smells emitted, in order to get rid of which it is sometimes necessary to open the lower window which blows into the tiger's cage. In the night of the 16th, the external thermometer was eleven degrees below the freezing point. On the following night it was nine degrees above the same point, a change of temperature sufficient to try the constitution of a far less phthisical sub-

ject than a tiger. Hence may have arisen their inflamed lungs, the disposition to phthisis being previously existent in one of them, and perhaps in both.

The lesson to be learned is, the advantage, perhaps I may say the necessity, of sleeping dens behind the front ones, for the larger and more valuable and delicate carnivora.

Had these animals lived to the 22d of the next month, two years would have elapsed without the loss of either lion, tiger, or leopard, although we have now no fewer than twelve of these animals under our care.

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### CEREBRAL AFFECTION.

1826. *Jan. 4th.*—A large spaniel, belonging to Mrs. Cutforth, has for three or four months been annoyed with some inexplicable nervous disease. Sometimes he wanders round the room for two successive hours. At other times he will lie and pant, as if he were almost about to die. If his head is lifted up he falls into a passion, and attempts to bite even his mistress. The eyes are red, and with a peculiar appearance of protrusion. The bowels have been in a torpid state, and it has been necessary to administer an aperient every third or fourth day. At times we have not been content with occasional laxatives, but we have pushed our purgation to a very considerable extent. Emetics have also been repeatedly tried, and tonic medicines of various kinds: but all without the slightest avail.

Yesterday, without having been exposed to unusual cold, and without any probable cause to which such an effect could be traced, he lost the use of his hind limbs. He is unable to stand for a moment. Give three drops of the croton oil in two drachms of the syrup of buckthorn, and administer injections. The appetite of the dog is not in the slightest degree affected.

6th.—The physic has had its effect, but there is no improvement as regards the paralytic affection. Rub the rheumatic embrocation (sp. tereb., ammon. et camph. āā ʒii, tr. opii ʒi) well into the loins and sacrum.

7th.—Refuses to eat, or, if he eats a little, is immediately sick, and frequently moans and cries. Give a little aperient medicine, with double the quantity of syrup of poppies.

9th.—Refuses all solid food, and, when he drinks, whether it be water or milk, he vomits almost immediately. There has not been any fæcal evacuation since the 6th. A two-drachm aloetic ball was administered, and which had the desired effect; the poor dog, however, moaned more and more, and would only lie on the cold stones. I obtained the owner's consent to destroy it in the

evening. The head only was examined: she would not permit any other part to be meddled with. There were three distinct processes or spiculæ on the inner table of the skull pressing upon and indenting, but not perforating, the dura-mater. That membrane, however, had become slightly ossified. There were distinct although very fragile lamellæ of bone. This was the second instance that I had met with of ossification of this membrane. There was considerable congestion of the vessels of the arachnoid membrane, but the brain did not present any morbid appearance. By the irritation of these spiculæ, and, afterwards, of the slight ossification of the dura-mater, that cerebral irritation was produced to which most of the symptoms related must be referred.

After-experience, where I had the opportunity of post-mortem examination, proved that this habit of running round in the dog is chiefly or entirely attributable either to processes of the cranial bones, prominent or sharp, or occasionally to exotosis, and of very considerable size too, on the inner surface of the skull. Why he should be more subject to these irregularities of cranial surface than any of our other patients, I confess that I cannot explain. My first partner, and master in canine pathology, used to refer this disposition to turn round to spasmodic cholick; "for," says he, "however the head may be connected with the disease, the nervous affection is spent on the intestinal tissues. The most attentive dissection of the head, in these cases, has never detected any morbid appearances there." I must, with all due and sincere deference, enter my protest here.

In every case of this *turnsick*—if I may so term it, from its resemblance to a disease bearing that name in sheep—I have found satisfactory morbid appearances within the cranium. The brain is the organ first and principally affected—the morbid state of the bowels is merely accessory.

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#### ON THE SUPPRESSION OF SUPPURATION CONSIDERED AS THE CAUSE OF CERTAIN MORBID PHENOMENA.

*By M. H. BOULEY, M. V. Paris.*

[This paper, by a French veterinarian of high and deserved reputation, may be pleasantly and usefully compared with the essays of our talented friend, Mr. Pritchard, now in the course of publication in our Journal.]

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AMONG the causes of those diseases, so frequent, so serious, and so often compromising the lives of our patients at the close of long and copious suppuration, there is one of great importance, and



which in modern times has been too much overlooked, I mean, *the suppression of the suppuration*—the sudden cessation of a secretion which, although morbid, had become necessary to the economy, and indispensable to *the depuration of its humours*. I borrow this expression from our old authors, and which will sufficiently prove that the fact which I shall attempt to illustrate is by no means a new one; it is to be found in almost every page of their writings, although somewhat vaguely expressed.

Read Solleysel on the article *fic* or *crapaud*—thrush—which he considers as an outlet of the corrupt humours of the body, and which are strongly determined to that part; and who was of opinion, that if the thrush is dried up, the humour will find some other vent. The treatment which he advises for this, and for many other diseases of the same family, is of an internal nature, in order to destroy the humour which exists within, e. g. *the administration of the liver of antimony, which, in his opinion, suffers nothing noxious to remain, and dissipates every thing which can engender that humour which supplies and nourishes the thrush*.

I abstain from any other quotation. In many chapters of Solleysel—in the writings of the authors on human medicine, on which he largely drew, and in the works of those who have so often copied him, we find continual cautions with regard to the danger of suppressing the sources of pus, expressed by the terms metastasis, driving in of humours, &c.

My present object is to recall the attention of practitioners to certain morbid phenomena, which cannot be traced to any other cause than the sudden suppression of a suppuration, or abnormal secretion, and which, by its long duration, has taken rank—if I may be allowed the expression—among the excrementitious functions, and by its cessation, disturbs certain organic movements.

In order to render myself better understood, I will state a case:—A horse is attacked by a certain disease, which is accompanied for a considerable time by an abundant secretion. That secretion shall amount to a pint or a quart in the course of a day. This long established excretion is suddenly suppressed. Some time afterwards, often within eight or ten hours, the animal becomes dull; he ceases to eat; his respiration becomes accelerated and loud; his eyes are injected; his nostrils are dilated, and his flanks beat violently.

On the following day his breath has a faint sickly smell, and his general condition is alarming. Auscultation and percussion indicate the cessation of the functions of the lungs to a fearful extent, and this most frequently at the inferior portion of them on each side. Many days do not pass before the breath assumes the foetid odour so characteristic of gangrene, and the animal succumbs

under the influence of the disease, improperly called *gangrenous pneumonia*.

In other cases, these phenomena are accompanied by the development of enormous tumours on the chest, or behind the shoulders—tumours which are the result of an infiltration of yellow serosity—such as are observed in the disease called by the old veterinarians *le charbon blanc*.

On examination after death, a great portion of the pulmonary tissue is found completely diseased, and particularly towards the lower portion of each lobe. It is hard and resisting; and, when cut into, it presents the appearance of black and white marble. Here and there, and in the midst of this mottled substance, are purulent collections, more or less considerable. The pus is diffused through, or, as it were, combined with the pulmonary tissue, the web-like texture of which has completely disappeared. The odour escaping from the lung is insupportably fœtid.

To what are we to attribute these phenomena, so rapidly and almost instantaneously produced? Is there a reabsorption of pus by the lymphatics, or by the veins? There is nothing to demonstrate this in the facts which I am about to state. During life, not one superficial absorbent has appeared engorged, as in the reabsorptions cited by M. Renault; and then, observe! on what product of suppuration could this reabsorption act, seeing that it was just at this moment that the pus could no longer be secreted that these phenomena arise? I will not stop to answer these questions, but proceed to the history of some cases in which the relation of causality between the suppression of the suppuration and the phenomena which followed it is so striking as to carry conviction to every mind.

CASE I.—An entire draught horse, about twelve years old, had been for more than two months seriously afflicted with very bad fistulous withers involving the summits of three of the spinous apophyses and the ligament which ran along them, and rendering them carious. A veterinary surgeon, to whom the animal had been entrusted, had favoured the escape of the pus, by making several incisions, and passing setons in the direction of the sinues.

He was admitted into our hospital on the 15th of November, 1838. There was a large and indolent swelling on the withers, and on the summit was the entrance to a fistulous cavity, two or three inches in diameter. The skin of the superior part of the withers, being loosened to a great extent, formed a kind of straight bridge across the cavity, and on each side was an incision perpendicular to the axis of the body. At the inferior angle of these incisions a seton had been passed, which was prolonged to the extent of some inches under this integument, and which thus completed the pro-

posed end, of enabling the pus to escape. The bottom of the superior cavity, and of the incisions, was lined with large soft fungous portions, infiltrated with serum, and to the most developed of which peduncles were attached. The pus that was secreted was abundant in quantity, serous, ropy, and foetid. On introducing the fingers into the opening, the summits of the three highest apophyses of the withers were easily felt, the cartilages of which were rough to the touch, and the cervical ligament, in part detached from the processes, was almost protruding from the wound. This last circumstance confirmed our diagnosis, already certain from the appearance of the wound and the pus.

I at once prognosticated that the animal would die; but the owner entreating that we would try to save him, I attempted the operation, serious and doubtful as to its result, of amputating the carious spinous apophyses.

16th.—The animal was cast. I prolonged with the convex bistoury the incisions on each side as far as the lowest opening of the fistulous passages which proceeded from them. Next, by means of the curved bistoury, I cut away all the fungous growths that gave an ulcerous aspect to the wounds. The slip of integument which extended over the superior cavity of the withers was not spared. It resulted from this, that a wound was made nearly a foot in diameter in every direction.

The carious apophyses being completely exposed, I excised every part of the detached suspensory ligament, and, by the aid of a good double pair of forceps, I removed, in succession, the cartilaginous summits of the three diseased apophyses, taking care to penetrate sufficiently deep into the spongy tissue of the bone. I thus obtained a wound susceptible of granulating, although in different degrees, through its whole extent. The skin on the right side being yet detached beyond the principal incision which I had made, I passed a small thread under that part, and dressed the wound with pledgets of tow moistened with salted water, and which I kept in their place by means of six stitches. The animal appeared to suffer greatly during the whole of the operation. He was led back to the stables, a restricted diet was ordered, and an ounce and a half of acetate of ammonia was given in a bottle of ordinary wine.

17th.—The wound had already begun to throw out some fungous granulations in parts, and its surface was covered with a purulent fluid, not perfectly elaborated. It was of a deep red colour, mingled with a livid hue. It was washed with a strong solution of chloride of lime, and dressed with pledgets of tow lightly covered with a digestive ointment. Give an ounce and a half of the acetate of ammonia, and somewhat improve the diet.

19th.—The granulations are more healthy, and pus is secreted, thick and creamy: the spinous apophyses, however, do not seem to



have undergone any change. Dress the wound with diluted spirit. Medicine and diet as before.

20th.—The wound looks well. Some minute particles of cartilage begin to be eliminated round the apophyses. The tissue of the bone begins to be softened, and exhibits a red injection. The same dressing and medicine; and the diet improved.

21st.—The wound is healthy, and the pus abundant. Dress twice in the day—the other treatment the same.

24th.—No change. The diet again increased.

The proprietor beginning to be afraid of expenses, the animal was given up to us. Being desirous to see what effect a sudden stoppage of a purulent secretion so abundant, and so established, would produce, I dressed the wound with pure acetate of lead, and suspended all internal medicine. The same diet was continued.

At four o'clock in the afternoon, a tumour as large as an egg, and that could not be touched without pain, began to develope itself on the right side of the chest. The animal was dispirited: he staggered as he walked—the respiration was accelerated and loud, and auscultation enabled us very distinctly to hear the peculiar sound—*un râle muqueux*—caused by large bubbles in the bronchial passages. The true respiratory sound, although weak, could be recognized at the inferior portion of the lobes on each side. There was evidently the commencement of pulmonary obstruction.

25th.—The tumour on the chest was as large as a man's head. The granulations in the wound were almost sunk to a level with its surface, and were of a livid colour—the pus that was discharged was small in quantity, and became concrete in the form of thin pellicles. The respiration could be heard at a greater distance—the nostrils were dilated, and the vessels of the conjunctiva were strongly injected with a reddish yellow fluid. No respiratory sound could now be heard at the inferior portions of the lungs. The animal was dispirited and debilitated, his muzzle was almost on the ground, and his tottering limbs could scarcely support his weight. The pulsations of the heart were strong, vibrating, and almost convulsive. The pulse could not be felt. The appetite was quite gone. The wound was again washed with the acetate of lead, and left exposed to the air.

26th.—The tumour of the chest has extended to the left side. The gait of the animal is still more vacillating. The breathing is more embarrassed, and the breath has a faint nauseous odour.

27th.—The tumour has become enormous, and has reached to the front of the shoulder on the right side. The respiration is dreadfully laborious. The true pulmonary sound can only be heard in the superior portions of the lungs; below, nothing can be distinguished but the sound of impending suffocation in the bronchial passages. The breath is now absolutely fœtid. The patient



can no longer stand—he is continually but fruitlessly endeavouring to rise. He died at two o'clock in the afternoon.

*Post-mortem examination twenty-four hours after death.*—

*Thorax*: On opening the thoracic cavity, the lungs did not in the slightest degree sink. They were hard, resisting the pressure of the fingers, and, externally, of a deep brown hue.

Being detached with the heart from the thorax, and carefully examined, they presented on each side of the superior portion of them the proper and normal appearance; but below, both of the lobes of the lungs had undergone a complete change. They were of a grey, leaden hue; and when pressed upon, reminded us of the firmness and resistance of the liver.

On cutting into their substance, they presented that remarkable black and white marbled appearance which characterizes the diseases of the lungs, so improperly—I repeat it—designated by the name of gangrenous pneumonia. These black and white spots are not, in reality, as MM. Reuault and Delafond have proved, any thing more than the fibrous and cruoric parts of the blood, separated in the cellular tissue of the lung, and so combined with that tissue, that they resist all inflammatory reaction on its part, and macerate it in the midst of their putrid deliquescence, when, under the influence of air and moisture, they become softened and putrefied. Here and there, in the midst of these black and white clots, there were cavities of the size of a nut, the walls of which were formed by the pulmonary tissue, combined with the fibrous matter of the blood, and which contained some pus in its natural state. In some places the pulmonary tissue was already decomposed, and diffused an odour characteristic of gangrene of the lungs.

The heart was soft, flabby, and discoloured. The blood contained in the interior of its cavities, especially in those on the right side, was black, liquefied, and having the appearance of pitch. Globules of some oily substance were also seen floating on its surface. The internal membrane of its cavities, and of the large vessels belonging to it, were stained of a deep red colour. The organs of the abdominal cavity had not undergone any change essentially referrible to themselves. The colour which some of them had assumed was to be traced to the altered condition of the blood: thus the liver was pale, soft, and friable; the spleen was a little tumefied and softened, and, being pressed or scraped, was easily reducible to the consistence of black mud. The enormous tumour on the chest was formed by an infiltration of yellow serosity into the cellular tissue. Not a single superficial lymphatic appeared to be engorged—not a vein presented the slightest trace of inflammation.

[To be continued.]

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## THE ANGIOLOGY OF THE STOMACHS OF RUMINANTS.

*By Professor GELLÉ, of the Royal Veterinary School of Toulouse.*

THE posterior aorta presents no other sensible difference in the ox, compared with its course in the horse, than in the vessels which are determined to the stomachs: thus the celiac artery, a much larger vessel in cattle than in the horse, is divided at first only into two principal branches; first, the hepatic, which takes the same course as in the horse, and all whose ramifications are confined to the liver; second, the gastric, which afterwards furnishes the splenic. The splenic artery itself differs from that of the horse; for, after the space of an inch, it is divided into two branches, the anterior of which proceeds forward, and towards the left, arrives at the scissure of the spleen, and expends itself in that body without contributing any vessels to the paunch. The other, situated posteriorly, and of larger size, and destined for the rumen, takes a direction posteriorly—follows the superior scissure, and then takes the posterior one—enters between the two lobes of that stomach, and arrives at last at its inferior surface, where it bifurcates, following the scissures which form the compartments of the rumen.

This artery furnishes some lateral branches in its passage, which distribute themselves on all the posterior and inferior parts of that viscus. The gastric branch of the celiac, or rather the gastric artery, is also divided into two principal branches; first, the anterior one, which follows the superior canal, reaches the anterior mediastinum, gives different branches to the anterior part of the paunch, and has frequent anastomoses with the vessels that come from the posterior branch of the splenic artery; second, the posterior one, which gives numerous branches to the reticulum, the maniplus, and the abomasum: the veins follow an analogous direction, in order to pour themselves into the splenic branch of the vena porta.

By this arrangement it is seen that the posterior branch of the splenic artery in the ruminants replaces those vessels which, in the horse, go from the splenic artery to the great curvature of the stomach.

In the young sucking animal, and in whom, consequently, the paunch discharges no function (if we may so say), the vessels of the abomasum are most developed and receive most blood; but this vascularity gradually changes, and in proportion as the animal uses aliment of greater consistence, and susceptible of undergoing the process of rumination. In the adult animal, the distribution of these numerous arterial ramifications is disposed in such a way that, all other things being the same, the paunch receives the least blood, the reticulum a little more, and the abomasum is the most

abundantly provided with it; and this is in perfect accordance with the secretions and the functions which each of these stomachs has to discharge.

*Le Zoïatre du Midi, Fevrier 1838.*

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## THE RUMEN, A RECEPTACLE OF WATER.

*By Mr. H. W. SPARROW, R.V.C.*

BEING aware of the importance of that branch of the veterinary art designated "cattle practice," a preparation for which is now so zealously and nobly demanded as an indispensable part of the education of the veterinary student, I think that it behoves every one who professes to follow and who loves this noble art—and no one should follow it who does not love it—to contribute his mite to the common weal.

When Mr. Ernes' valuable Essay on Rumination was discussed, and the manner in which a fluid passed into the stomachs of ruminants was spoken of, it was said that a small portion only found its way into the rumen, and that the greater part flowed on into the abomasum. With all due deference to those who are superior to me in years and in science, I must beg leave to doubt the truth of this assertion, and to state it as my opinion, that the greater portion goes into the rumen, and the lesser into the abomasum. I will refer to actual facts, and one fact is worth a thousand theories.

Cattle and sheep when bought for slaughter, and driven home from the market, are, if practicable, sent by the purchaser to a field for a few days, or a week, or occasionally two or three weeks. If it is grass time, probably the animal has but little water. By and by he is killed, and the contents of the rumen are found to be of a pultaceous character. If he is not sent to a field, he is put into a pound or shed, and fed with hay, having water continually before him, and the contents of the rumen are soft, as in the other case. Too often, however, only hay is given to him, and then the contents of the rumen are very hard; and, on such occasions, it is not uncommon to hear the slaughterman say to the person whose duty it was to supply these animals with water, "Why! you have not given these beasts, or sheep, any thing to drink." From this I infer that a portion of the water, and probably the greater portion, goes into the rumen; the rest—the smaller portion—into the abomasum; and that the pillars are for the same purpose or use to the other stomachs which the epiglottis is to the trachea, namely, in order to prevent any thing from passing that would interfere with the formation of chyle.

## THE VETERINARIAN, APRIL 1, 1839.

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Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

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[We agree so cordially with the greater part of the opinions stated by Mr. St. Clair, and so will almost every reader of THE VETERINARIAN, that we eagerly and thankfully adopt it as "the Leader" of the present month.—Y.]

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### ON THE USE OF THE LANCET, AND ON THE IMPROVEMENT OF THE VETERINARY PROFESSION.

*By J. P. ST. CLAIR, Esq., V.S., Morpeth.*

I WAS much gratified while reading Mr. Gibson's Essay on Phlebotomy, and the debate that followed in the Medical Association—a body of men moving, as it were, with one feeling, with one impulse, and all aiming at the same object, the elucidation of truth and the advancement of the profession. The Association is certainly a credit to its founders, and will, ultimately, prove a blessing to the country. It is the representative of a great body—the forlorn hope of a phalanx of intellect—in whose hands are placed the destinies of an infant science, and which is well worthy the confidence placed upon it. It constitutes one of those tributary streams always flowing, and helping to form that great and mighty river of intellect which wends its way slowly and steadily until its waters are poured into the boundless ocean of universal improvement. Allow me to state, that there is not any subject emanating from the press that is looked into with more avidity by country practitioners than the transactions of the Veterinary Medical Association.

But, to resume my subject, Mr. Gibson's Essay was highly creditable to him. A subject has been settled which had occupied the attention of the veterinary world for a considerable time. It wanted to be set at rest; and, passing into a law, I hope that it will be generally adopted by the profession.

I have, myself, used the lancet for a considerable length of time,



and find in it every thing that is necessary in order to enable me to abstract blood from every part of the frame. They who have already adopted it I hope will persevere in the use of it; and they who have not become converts to its employment, will see, I trust, the propriety of supporting any improvement beneficial to the profession, or which is the means of conferring on it an appearance of scientific treatment to which the ignorant or itinerant pretender can never aspire.

Utterly devoid of real science as the farriers generally are, with what mystery do they visit their patients! and their remedies are never-failing ones. I am anxious to draw a broader line of distinction between the veterinary surgeon and the ignorant pretender; for the latter has a great hold on the public mind, particularly among the middle class of farmers. These men constitute their strong holds—their fastnesses.

While I freely admit that a considerable proportion of the agriculturists are intelligent upon many a subject that concerns their welfare, yet there are others strangely ignorant, and those are the men with whom the veterinary surgeon has oftenest to contend. They are the source whence the evils of quackery spring. They are men seemingly walking with their eyes open, and enjoying the light of day, but whose minds are closed against every improvement, or who consider improvement as an innovation upon established rules, and an infringement upon settled and ancient customs. Such are the men with whom the veterinary surgeon has most to contend, and whom he has most difficulty in pleasing.

While on the subject of quackery, I will relate two out of many instances that came under my personal observation. Some time ago I was attending a cow labouring under indigestion. During the time that she was unwell the farrier called upon the owner. He was asked to look at the patient. The man of physic shook his head, and prescribed—what do you think?—the liver, lungs, and head of a sheep boiled with some *reesty* bacon—minced small and given together with the broth. This was administered unknown to me.

I saw a foal a few weeks ago afflicted with palsy, and unable to stand. Two of the wiseacres had been attending it conjointly.

The man of liver and lights pronounced him lame in the kidneys, "one of them being lapp'd over the other." The second medical gentleman said he was lame in the *blather*, and he would just put a stick up and see\*. The farriers are a class of men who have possessed the confidence of the public (particularly in the agricultural districts) from time immemorial; and they still cling to it with the grasp of dying men. Peace to their manes!

It is with unmingled feelings of pleasure that I turn to page 625 of the last volume. A new light has beamed upon the profession. It is now becoming—what it ever should have been—devoted to the cure and treatment of all domesticated animals. The great struggle is essentially over—prejudice has given way, and common sense has triumphed. The interests of the agriculturist will now be identified with the improved education of the veterinary surgeon; and he will receive his diploma with unmingled satisfaction, and fearlessly enter on the duties of his profession, conscious that, without deception and unwarrantable experiment, he will be enabled to undertake the treatment of every patient with which he may be entrusted.

This essential alteration in the duty and responsibility of the veterinary surgeon will demand that a strict attention shall be paid to the education of the student. The first and absolutely necessary change will be to lengthen the time of his attendance at the

\* Hitherto our interest has been deplorably sacrificed by the ill-placed confidence of the owners of cattle in the blacksmith of the parish, or illiterate and conceited grooms, or stupid and careless shopmen, or, a set of men infinitely more dangerous than all the rest, who, arrogating to themselves the style of *doctors*, ride about from town to town, distributing their nostrums, compounded of the refuse and vapid sweepings of druggists' shops, to the destruction of thousands of animals, whose varied disorders they treat alike, neither consulting nature nor art as to the cause or the effect.

Miserable animal! bereft of speech, thou canst not complain, when, to the disease with which thou art afflicted, excruciating torments are superadded by the absurd and reckless treatment of such men; who, at first sight, and without any investigation that can lead them to the source of thy disorder, pronounce a hacknied common-place opinion on thy case, and then proceed to open thy veins—to lacerate thy flesh—to cauterize thy sinews—and drench thee with drugs, adverse, in general, to the cure which they engage to perform!

veterinary school; for if it was deemed necessary, when only the diseases of the horse were studied, to devote a twelvemonth at one school, or two sessions at the other, for the acquirement of a competent knowledge of the veterinary art, is it possible that this can be obtained in the same time when the number of the patients is quadrupled?

A classical education is of great use in laying the foundation of our profession, as well as that of the human surgeon. It is almost utterly neglected in the education of the veterinary pupil; and the consequence is that his study is often a great labour, and too great a proportion of his time at college is spent in learning the meaning of the names of the different parts and diseases, and the technicalities that are used in teaching\*. Would it not be better to have a regular scale of classical education in our schools, as in those of the human surgeon? I know that it would be the means of deterring some young men from entering the profession; but, at the same time, it would induce men of superior education to unite themselves with us. It would place the profession still higher in the scientific world, and bring the veterinary surgeon and the gentleman more frequently in contact with each other.

I am aware that there are those who consider that the sons of blacksmiths and grooms make the best veterinary surgeons. I admit that the manual part will be better performed by them. They are more expert about their patients on their first entrance at the College; but it is practice which has given them this superiority, and the same advantages may be gained by the well-educated student, if he has sufficient perseverance.

Others say that the sons of farriers and blacksmiths have another advantage in their practical knowledge of the foot. This I admit is indeed an advantage, and one very beneficial in after-life:

\* The science of medicine is related to every thing. A mere physician, that is, a physician who knows nothing but the sciences which are supposed to belong exclusively to his own profession, is a non-entity. To deserve that title in its extensive import, it is necessary for us to know something of the principles and practice of every art and pursuit of man. There is scarcely one of them that does not furnish some useful facts or striking analogies which may be applied to practical purposes, or to the support of some important principle in medicine.—*Dr. Rush on the Diseases of Domestic Animals.*

but, if every student were compelled to make himself practically acquainted with the use of the knife—if the various manipulations of the forge formed not only a portion of his daily duty, but a prominent part of the examination; and, connected with this, if veterinary surgeons were permitted to preside over his examination—men who are most competent to judge of his proficiency in those branches of veterinary knowledge which are essentially connected with his useful and successful practice—then another great point would be gained in veterinary reform. The examination of students in the Clyde Street School would not be considered by them as effectual unless the examiners were partly composed of veterinary surgeons; and students are very particular in having the names of these gentlemen appended to their diplomas. A practitioner, not fifty miles from London, may well remember that, when we called upon a veterinary surgeon (who had been unavoidably absent when we were to be examined) in order to obtain his signature, he would not consent unless we would undergo a private examination. Of course we did not refuse. He was satisfied, and treated us courteously and kindly.

It would be well if other schools would adopt the same system. I am sure that there are men equally as talented in our own profession, and whose names stand as high in the medical, agricultural, and literary world, as those of some who sit in the present southern tribunal. Why should such men not be selected as examiners? How would the public think they were served, and what would be the feelings of the luckless wight who went up to Apothecaries' Hall, if Messrs. Percivall, Youatt, Bracy Clark, and others of the same cloth, were to sit in judgment upon him? The public would repudiate with scorn such a tribunal. The rejected and even the accepted candidate would think himself unfairly dealt with. In fact, it would be a mere burlesque.

The allowing of men of our own profession to sit as examiners would not only be an act of justice to the public and to the student, but our art would then, and then alone, be placed in its true position.

These remarks have been penned, not with a view of wounding the feelings of any individual, and, I trust, will not be considered



in this light. I have merely attempted to shew what *is* done, and what *should* be done. If I have probed the wound to the bottom, the cure rests not with me. It is in the hands of those who, I trust, are becoming conscious that farther reformation is needed in the veterinary profession.\*

## REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

"I never uses a *hanimal* so,  
Cos that I thinks it below me;  
But if I had a donkey what woudn't go,  
If I didn't wallop him—blow me!"

*Costermonger's Song.*

SUCH is man! endowed with reasoning faculties, capable of appreciating the affections and administering to the wants of those animals over whom he reigns undisputed lord—fickle, cruel, and ungenerous—too often found, from one cause or another, ill-treating and performing acts towards them displeasing to God and revolting to the better feelings of human nature. So true the description of the poet:—

"What would this man? now upward will he soar,  
And, little less than angel, would be more;  
Now looking downwards, just as griev'd appears,  
To want the strength of bulls, the fur of bears.  
Made for his use all creatures if he call,  
Say, what their use had he the powers of all?  
Nature to these, without profusion, kind,  
The proper organs, proper powers assign'd;  
Each seeming want compensated of course,  
Here with degrees of swiftness, there of force;  
All in exact proportion to their state;  
Nothing to add, and nothing to abate.  
Each beast, each insect, happy in its own.  
Is heav'n unkind to man, and man alone?  
Shall he alone, whom rational we call,  
Be pleas'd with nothing, if not blest with all?"

If, however, there is one duty devolving on man more honourable than the rest, and which ought to be more pleasing to himself, it is the alleviation of the sufferings of those dumb animals designed by a beneficent Creator for his use and service. It is the pleasing satisfaction of having, in some measure, performed this duty, that comforts the right-minded veterinary surgeon, and stimulates him forward in his exertions. Reader, does it you?

We are led, in some degree, into this train of thought, from having seen a neat little book entitled "*The Obligation and Extent of Humanity to Brutes, principally considered with reference to Domesticated Animals*, by W. YOUATT, V.S.," &c. &c.

Picturing to ourselves a mental treat, and feeling our heart glow within us with pride that one, at least, of the profession had entered the lists in such a noble cause, we snuffed our candle, and drawing our chair nearer the fire—for our outward man by no means partook of the glow within—we found our attention drawn (after having read the Dedication, Preface, and Introduction) to the obligation of humanity to animals, as founded on the Scriptures. These obligations are well expressed, and the quotations from the Scriptures well selected. We are tempted to give one quotation from this part of the author's subject, not only because this part constitutes the grand foundation on which he builds his argument, but because it will in some measure explain the style and the practical observations which are every where eloquently enforced. Our author had just been speaking of the watch that God exercises over all his creatures; and, he goes on to say,—“That the care of Divine Providence extends to the smallest and meanest being alive—that each of them is watched over and provided for as if there were no other in the universe—what exalted ideas must this give us of the superintending care of our common Father! and what a useful, awful lesson does it read us with regard to our treatment of those who are made, in some measure, dependent upon us!! Shall his mercies extend to them all, and we glory in the wanton exertion of our tyranny? Shall he watch over their safety, and we exult in the numbers that, without the slightest pretext of necessity, we torture and destroy?

“Some of the noblest of them are reclaimed from their state of nature, and subjugated to us in order to help our weaknesses and supply our wants. Instead of offering the corresponding return—instead of aiming to make their state of subjugation one of comfort—shall we abuse our power and dominion because they are defenceless and dumb? What plea for mercy shall we offer when our delegated authority is at an end; and we stand at His tribunal whose works we have abused, and whose tender mercies have made no impression on our callous hearts?”—Pp. 10, 11.

Cold, indeed, must be the heart of that man who is not affected by such considerations as these. Let veterinary surgeons beware that they are not found sanctioning any proceedings but those which are for the benefit of the animals whose medical attendants they are.

The next division of our author's subject enforces the duty of humanity to animals. The delegated right of man over animals is properly stated and limited. The whole of this division is so ad-

mirably connected, that we feel we should weaken the argument by making any quotation: we trust that every member of the profession will read it for himself.

Pass we on to the next part of the Essay on "The Usefulness and good Qualities of the Inferior Animals."—Here the reader will find much to divert, interest, and instruct him. "The beautiful adaptation of each to the precise situation which he occupies!"—the anecdotes, incidents, and relative arguments deduced, prove in an expressive manner, if proof were wanted, the author's position, that "All are but parts of one stupendous whole." "Each is independent of the others, and yet linked with his fellows. Each possesses memory and reason. Each is capable of acquiring knowledge from experience, and of devising means for the accomplishment of particular ends. Each is perfect in the station in which he is placed, and, possessing this degree of knowledge, perfect so far as that animal is concerned; consequently he has a claim on our kindness, and deserves not ill-usage and cruelty. Every animal—the horse, the dog, the ox, the sheep, the wasp, and the bee—is perfect in its kind; and there are certain faculties belonging to each of them which would laugh our boasted intellect to scorn."—P. 63. Truly did the poet exclaim, when he looked round on the face of creation,

"Where all is form'd  
With number, weight, and measure! all design'd  
For some great end! where not alone the plant  
Of stately growth; the herb of glorious hue,  
Or foodful substance; not the labouring steed,  
The herd, and flock that feeds us; not the mine  
That yields us stores for elegance and use;  
The sea, that loads our tables, and conveys  
The wanderer man from clime to clime; with all  
Those rolling spheres, that from on high shed down  
Their kindly influence: not these alone,  
Which strike ev'n eyes incurious, but each moss,  
Each shell, each crawling insect, holds a rank  
Important in the plan of HIM who framed  
This scale of beings; hold a rank, which lost  
Would break the chain, and leave behind a gap  
Which Nature's self would rue."

But we are taking up much space with what, to some readers, will be thought dull and uninteresting. We might add more; but the next division of the subject "on the Application of the Principle of Humanity to the Treatment of Animals," presents many facts which cannot fail to interest the veterinary surgeon, and many a hint may we find for our profit. Take the following as a sample: "A horse, almost thorough-bred, was sent to Lockley's *tan yard*—the Scotch knacker's yard, in Edinburgh. He was dreadfully lame, and had been condemned by his medical attendant. The

yard was full, and he was not immediately destroyed. A day or two afterwards a person accidentally saw the horse. He was struck with his appearance, and, there being no law against this in Scotland, he bought him for a guinea. The horse got better—so much so, that he was put into training. He won several steeple chases, and was eventually sold for 200 guineas.”—P. 148.

This, I trust, will serve as a warning to all practitioners against a hasty condemnation of any of their patients. I have heard of several cases where horses have done well afterwards.

There are also many narrations which cannot fail to excite our sympathy, and, I should trust, to arouse our energies, and make each of us determine to perform his share in putting down such practices as are there shewn to exist.

Those individuals who have lately taken an interest in the steeple chase at Liverpool, where two horses have been sacrificed, will do well to read the following quotation:—

#### “ STEEPLE CHASES.

“ These exhibitions cannot be too severely reprobated. They have no kin to straightforward, honest sporting—they are chiefly advantageous to horse-dealers—they seem established for their peculiar purposes; and a door has been opened for the vilest and the most extensive fraud. With reference to the humanity of the thing, it may be asserted, that it never could have been intended by the Author of Nature that the powers of the horse should be so severely and in such a way taxed. The end ought to justify the means; but there is no legitimate or rational end to be answered by these noble animals being urged at their utmost speed over all sorts of ground, and with every dangerous obstacle in their way. This is a power which was never delegated to man. As yet, and we hope for ever, the steeple chase remains, with few exceptions, unpatronized by sportsmen of elevated station or character.

“ From the earliest records of the turf, in our own and in every other country, the *Hippodrome*, or course for horses, was reserved as a trial of their speed or stoutness. Such exhibitions are not only justifiable but commendable, for, without involving any great or unnecessary cruelty, they are connected with the interests of the country: but no interest can be served here, except that of the dealer or the adventurer. Several excellent horses have already been sacrificed to this brutal diversion, and doubtless many others will be murdered in the same way, until so horrible a practice is put down by the expression of universal detestation.”—P. 112.

On some points, however, we do not agree with the author, nor do we think that the facts so clearly stated in the former part of



the work are sufficiently carried out in the latter. For instance, on the plucking of the live goose, our author states, in one place, that it "carries cruelty on the face of it;" but, in a few sentences afterwards, he says, "At all events, I would say, that if interest and custom must sanction the stripping of the living fowl, it should be done as gently as possible." Now, we would say, it should not be done at all. And we would ask—How would man like to have his hair plucked from his head twice or thrice a-year, to stuff our cushions with, if it should be thought to make them more easy, even though he may enjoy the pleasures of a comfortable wig? We think that he would prefer having them stuffed with straw rather than submit to so painful an operation. These, however, are mere matters of opinion, and which do not detract from the general excellency of the work.

The remarks on the dissections of living animals will find an echo in every humane heart, and there are many hints there stated which we veterinary surgeons would do well to consider.

We were going to add a word or two on the future state of brutes; but, seeing that our candle is nearly burnt out, we beg leave to wish our author "Good night," thanking him for the pleasant treat he has afforded us, and for the useful hints which his book contains. The whole of its contents we hope every veterinary surgeon—nay, every individual—will make himself acquainted with; and that it may fulfil the purposes for which the author has been induced to submit it to the public, is the sincere wish of his grateful Friend,

CHRISTOPHER SOUTH, V.S.

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[I will not pretend that I do not know the author of this critique, notwithstanding his assumed name. I do know him, and highly value him. Praise from such an one is indeed dear to me; and the more so, as coming perfectly unsolicited and unexpected. If I dared, I could produce passages from this very book which would prove how deeply he is interested in the cause of humanity. At no distant period, I trust that I may be enabled to do so. In the mean time, I do assure him, that if, what I have scarcely the vanity to expect, another edition of this little work should be required, I will shew him that his hint with regard to the latter part of it has not been thrown away.—Y.]

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## VETERINARY JURISPRUDENCE.

PIERS, CLERK, v. OXLADE.

THIS was an action of trespass, brought by a clergyman residing near Great Marlow, against a farmer, for killing his dog. A plea of justification was entered, that the dog was mad, and at large in a rabid state, to the great terror and danger of the people; and that thereupon defendant killed him, as he lawfully had a right to do. By the replication the madness was denied.

Mr. Kelly and Mr. Gunning for the plaintiff; Mr. Serjeant Storks for the defendant.

It appeared in evidence, that the dog was a favourite terrier, accustomed to be treated with great care and kindness by the family, and so little notion had they of the dog being mad, that on the morning of the day he met his death, the cook fed him, and he played with the children. Five witnesses positively denied that on that day the dog had any symptoms of hydrophobia, or was in any other way dangerous. Three witnesses on the other side swore to the symptoms of rabidity, such as foaming at the mouth, and snapping at pigs, &c. At all events, it was certain that somebody had pronounced him mad, and raised the "hue and cry" upon him, before the defendant killed him, which he did in the pursuit, with a blow of a spade, after some other person had discharged a gun at him.

The learned Judge left it to the Jury to decide between the conflicting evidence on both sides, telling them, that if the defendant did not act from any malicious intention, but really believed the dog to be mad, and thought, *bonâ fide*, that in killing him he was preventing danger to the public, he would be justified, although the dog was not in reality mad.

The Jury returned a verdict for the defendant.

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A LIST OF GENTLEMEN WHO HAVE PASSED THEIR EXAMINATION AT THE ROYAL VETERINARY COLLEGE, LONDON.

*February 27, 1839.*

Mr. Henry Arthy, Fordham, Essex.

Mr. James Bennett, Havering, Essex.

Mr. Thomas Insley, Newton in the Willows, Lancashire.

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## TO CORRESPONDENTS.

Our Journal lies on the table of most of the subscribers to it. This prevents the insertion of a very ingenious Essay which we have received. We should be most happy to hear from the author on any other subject.

The Editor will probably be compelled to leave town for a fortnight, after the middle of April. May he, as a personal kindness, ask those who intended to oblige him with communications for the next number, to contrive that they shall reach their destination by the 12th of April.

The communications received a little too late from some Correspondents, in our next.

THE  
VETERINARIAN.

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COMPARATIVE ANATOMY AND PATHOLOGY.

By Mr. YOUATT.

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LECTURE XXIV\*.

*The Turbinated Bones in Quadrupeds—the Horse—the superior one—the frontal and maxillary Sinuses—the inferior one—their protection—loss of the Nasals—Excision of the superior one—ditto of both—the turbinated Bones of the Ox—Sheep—Goat—Deer—the sub-orbital Sinuses in Deer—the Dog—the Ethmoid Bone in Dogs—the influence of the length of the Face—the Swine—the Seal—Birds—Fishes.*

IT will be convenient to describe the whole of the internal nares in our domesticated quadrupeds before we proceed to any other class of animals. There are two bones, or collections of bony cells, in each nostril, which, from their peculiar convoluted shape, are called turbinated bones.

*The Turbinated Bones—Horse.*—In this animal and all herbivorous ones, and also, as we shall hereafter see, in the long muzzled carnivora, these bones are lengthened, and comparatively simple in their construction. There are two in each nostril; and termed, with reference to their situation, *the superior* and *the inferior*. The superior turbinator in the horse seems to be almost a continuance of the ethmoid bone. It presents a labyrinth of cavities, divided into cells by septa of curious tenuity, communicating with each other by distinct passages, and also the bones of most of the cells being perforated by innumerable minute holes, establishing a nervous communication through the whole labyrinth. Some of the partitions are imperforate, perhaps to support the numerous arches

\* In the last line of the former Lecture, in page 153, for "animals," read "quadrupeds."

which result from the convolutions; but, even there, the parietes are of wondrous thinness. They are elastic in the living animal, but exceedingly brittle in the dead one.

This bone is so placed as to form a division between the nasal cavity and the maxillary sinuses, and to render them distinct cavities; and, probably, distinct in their office, and as well in their situation. There is a communication between them under the valve-like prolongation of the lower cell of the superior turbinated bone.

*The Cavities communicating with the Nose.*—This, perhaps, may be the proper place to hint, that I believe, with Sir Busick Harwood, that the sinuses which surround the internal nares, the maxillary, the sphenoidal, and the frontal have nothing to do with the sense of smell. No prolongation of the olfactory nerve has been traced into one of these cavities. Each of them communicates with the nostril by a single aperture, and by that alone. A free current of air is evidently necessary for the perception of scent, which we occasionally prove, when, half-sickened by some nauseous stench, we close the nostrils, continuing to breathe through the mouth, and the posterior communication between the nose and the mouth remaining open. No smell is then perceived, and, indeed, it is difficult to conceive that a stream of air, diverted from its natural course, should make a circuit of such cavities, at the same instant passing and repassing in opposite directions through the narrow channel\*.

*The inferior Turbinated Bone.*—This is more porous than the superior one; and, although simple—compared with that of carnivorous animals—is far more convoluted and complicated than the superior one. It is farther removed from the origin of the nerve, and therefore a greater extent of surface is contrived, in order that the impression may still be lively and distinct. The gauze-like perforated structure of this bone is deserving of notice. Being somewhat more exposed to danger than the upper turbinate, peculiar means are taken for its security. The lower portion of the upper turbinated bone hangs comparatively loose in the nasal cavity, but the inferior turbinated bone is attached to the superior maxillary bone, as well as to the nasal. Neither of them, however, can be separated from the bony parietes of the cavity by maceration, but they are too readily broken off in our dry preparations.

There is a singular prolongation of this bone over the inner ala of the false nostril, and which may be readily seen by lifting the nostril. It is a hollow bony pedicle, which has more than once

\* Sir B. Harwood's Comparative Anatomy, p. 15.



deceived the unwary, and been mistaken for a morbid tumour, or small polypus. Its use is probably to give some support to this part of the false nostril ; but it can have nothing to do with the sense of smell.

*The Protection of these Bones.*—I cannot pass on without directing your attention to this. These delicate conchs lie principally under the nasal bone. I am sure that you have often admired the intricate, morticed connexion of these bones with the frontal ones above, and the firmness of attachment that is given to them, and which no human ingenuity could have better contrived — the denticulated edge by which the nasals are attached to each other, so far as the ethmoid bone extends, and some way along the turbinators—the connexion of these bones with the superior maxillary bones below—the singularly and admirably contrived buttress—the two laminae of the maxillary, with the nasal bones deeply received between them—the squamous suture of the temporal bone—lowest of all, the processes of the anterior maxillary succeeding to those of the superior, and, between plates of these bones, many times thicker than the superior ones, the nasals being received, and placed almost beyond the reach of injury. These are elucidations of admirable contrivance that should not be lost sight of ; and much do I exult that the present demonstrator at the College rarely overlooks illustrations of this kind, so pleasing and so useful.

There is a singular account of a horse coming within the reach of the sail of a windmill that was working very quickly. The blow fell on the side of the face, and, with such force, that it took away the whole of the nasal bones, leaving the nasal cavity completely exposed. The wound in a manner healed ; and the animal was able to work again, and continued at work, the part being merely covered by a piece of leather. There was not only no glanders, but his health was not in the least impaired. This, however, was an exception to a general rule ; for the result is always to be feared when injury is done to the Schneiderian membrane. It is much to be regretted that no mention was made of the impairment, whether partial or total, of the sense of smell.

*Excision of the superior Turbinate Bone.*—There is a case of this, and of considerable interest, upon record. An osseous tumour filled up the entire cavity of the left nostril, and, pressing the septum out of its proper situation, considerably encroached on the right nostril. Mr. Boycott, to whom we are indebted for this case, considered it to be a morbid growth of the superior turbinated bone, and advised the attempted excision of the tumour. Having cast the horse, he made an incision four inches in length along the edge of the nasal bone. He then made a second incision in a transverse direction from the superior extremity of the former ;

and, on dissecting back the flap, a considerable portion of the side of the tumour projecting through the aperture between the nasal and superior maxillary bones, was exposed to view. With a chisel and mallet he removed about two-thirds of the tumour in one mass; and, afterwards, by means of the same instrument, cleared the cavity of every particle of morbid growth. The operation was necessarily long, and attended with great loss of blood; but the animal was quite well six weeks afterwards, and was constantly ridden as a hack, without any impediment in his breathing, or the least deformity remaining. The tumour was of a conical form, five inches in length and six in circumference. The internal structure was that of the turbinated bone, cancellated and spongy. This is an interesting case, and does Mr. Boycott much credit. Here also I wish that he had said something of the apparent impairment or otherwise of the sense of smell. So far, however, the operation is valuable, as shewing us that we may occasionally take great liberties with these bones.

*Instrument for excision of the Turbinated Bones.*—A French practitioner, M. Germain, invented an instrument for the cure of glanders, by the removal of the turbinated bones; and a school was established, at immense expense, in which the mode of operation was taught. The editors of the French Journals, although too often and too seriously disagreeing with each other, united in exposing the folly of such an attempt. “The membrane of the turbinated bones,” they said, “was not the only one that was exposed to ulceration, or secreted the infectious discharge. Although they were composed of numerous cavities, the matter of glanders was not collected or accumulated in them, but in the sinuses which communicated with the nose. Such an operation, therefore, could not produce any good effect; for the other portions of the cavity would continue to be diseased, and probably the inflammation would be aggravated by this dreadful operation.” I ought, perhaps, to apologize to you for saying one word respecting this folly: but you should be acquainted with every experiment, foolish or commendable, instituted in order to diminish or prevent the ravages of this disease. For awhile this excision of the turbinated bones was the rage in France, and more than a hundred and fifty thousand francs were expended by one of our countrymen, not five years ago, in this ridiculous business.

*The Ox.*—In this animal the turbinated bones, like the ethmoïd bone, are considerably more developed than in the horse, for the reason stated in my last lecture—that he has occasion for greater acuteness of smell, and particularly in the early part of the year, when the plants are young, and have not acquired their full scent. The lower of these bones is very much larger than in the horse;

the divisions between the cells are thinner, and the perforations more numerous.

*In the Sheep* also the lower turbinated bone exceeds the upper both in length and bulk. It fills up the whole of the nasal cavity, accounting for the readiness with which the respiration of the sheep becomes distressingly laborious when he is a little hurried. The convolutions in the lower ethmoid bones of this animal are double, with a septum between them, in order to give them strength, deprived, as they in some measure are, of the protection afforded by the nasal bone in the horse and the ox. The perforations in both the turbinated bones are more thickly set than in the ox, and they are continued not only through the convoluted portions, but through the septum\*.

*In the Goat*—a wilder animal than the sheep, and requiring a still acuter sense of smell—the number of perforations are still greater than in the sheep.

*In the Deer*, the perforations are so exceedingly minute as to vie with the finest lace in delicacy of fabric. The older physiologists, and even those of highest repute, imagined that *the sub-orbital sinuses* in the deer were connected with the sense of smell. Sir Busick Harwood says that “the deer is distinguished by a peculiarity of formation which may probably be conducive to the subtilty of the organ of smell. Between the internal angle of the eye and the ridge of the nose there is a space irregularly quadrangular, over which a strong membrane is spread, which performs the office of bone in covering and protecting the cavity beneath. This cavity does not communicate with the nostril by means of a small aperture, as is usual in the sinuses of other animals, but is entirely laid open to it throughout its whole extent, which is portioned out into different cells or bony plates, either perforated or reticulated. Similarity of structure and unimpeded connexion leave but little doubt as to the use of the partt.” Tiedemann approaches to the real character and function of the part, when he says that “In many ruminantia, especially those of the genus *cervus* and antelopes, there is a pit on each side beneath the internal angle of the eye, leading to a chink, and having its skin furnished with follicles, which secrete a somewhat thick, viscid and fatty liquid‡.

Mr. Bennett, the secretary to the Zoological Society, and by whose premature death zoology and its associate sciences suffered an irreparable loss, in one of those interesting evening meetings which take place at the museum, more satisfactorily illustrated the matter. He was speaking of the series of antelopes in the menagerie, and particularly of the Indian antelope, whose large cutane-

\* Harwood, p. 18.

† Ib. p. 20.

‡ Tiedemann's Physiology, p. 209.



ous follicle beneath his eye formed so striking a feature in the animal's physiognomy. It never appeared as a simple slit, but its thickened edges pouted so widely as to be at all times partially everted. When he was excited—and he was at all times highly excitable—the eversion of the bag became complete, and its thick lips being thrown widely back, the intervening space was actually forced forward so as to form a projection instead of a hollow. The animal on such occasions delighted to thrust repeatedly the naked lining of the sac against any substance that was offered to him, and that soon became loaded with a dark-coloured secretion of ceruminous matter, having a slightly urinous or sexual odour. There was an emasculated individual of the same species, of full growth, in which this suborbital sinus presented nothing but a slight fissure, the edges of which were closely applied to each other, and never appeared to be moved. Messrs. Owen and Ogilby, both of high authority on such a subject, expressed the same opinion, and a letter was read from Mr. Hodgson, of Nepal, a corresponding member of the society, in which the same hypothesis was maintained and incontrovertibly proved by the various appearance of the gland and its secretion at different times\*. I am not wandering far from my subject; for although I deny that this apparatus is connected with the organ of smelling in the animal who possesses it, it secretes a substance, by the diffused odour of which the purposes of nature are accomplished.

I have hitherto been speaking of the herbivorous quadrupeds: we now turn to the carnivorous ones.

*The Dog.*—I select this animal from among the predaceous ones because he comes under our daily observation—he is our companion as well as our slave. The olfactory organs of the animals that have hitherto passed in review enable them to distinguish vegetable odours, and, so far as we have the opportunity to observe, those alone; except such other emanations as are connected with the great law of nature. Their food usually presents itself wherever they go, and all that is required is to select the nutritive from the poisonous. It is not so with carnivorous animals. Their prey has no fixed situation. It is here at one minute, and, at the next, frightened by the approach of the destroyer, it is fleeing far away. The organ of sight would rarely serve for the discovery of its track. It is, therefore, necessary that the olfactory organs of the carnivora, should be “sensible to the weak impressions of particles widely diffused through the surrounding medium, or slightly adhering to those bodies with which the object of their pursuit

\* Proceedings of the Zoological Society, March 22, 1836.



may have come into contact." Then we expect to find some peculiarity of conformation, and we are not long in discovering it. The nasal sinuses are small in all of them, and totally wanting in many; confirming the conjecture which I just now ventured to offer, that they have little or nothing to do with the sense of smell, but are connected with other purposes. The frontal sinuses, however, remain, but much curtailed of their proportions, in animals of the canine and feline tribes.

*The Turbinated Bones in the Dog.*—I have already stated that "this bone is most of all developed in the dog, and that it needs to be so with him on account of the acuteness of scent which he possesses. It occupies nearly the whole of the superior portion of the nasal cavity, and materially trenches on the situation of the turbinated bones in other animals." Both the ethmoid and the turbinated bones assume a very different form. There is not so much room lost in a cell-like structure—they are more laminated and bent into a spiral form—far more complicated, and, compared with the space which they occupy, offering a more extensive surface for the distribution of the olfactory nerve. The comparative area of the nasal cavity is developed in every direction in its upper portion, and in the neighbourhood of the cribriform plate; but it is rapidly diminished in the lower part of the nares, leaving us to conclude, that the upper or ethmoidal portions of the nose are more concerned with the sense of smell than are the lower ones. They are supplied by larger and more numerous branches of the olfactory nerve.

*The Length of the Head* in the horse, the ox, the deer, and other herbivorous animals is given chiefly for the more easy prehension of food, and branches from the olfactory nerve ramify over the whole of the nasal passages, in order that they shall be brought as near as possible to the destined food of the animal: but the principal seat of smell is nearer to the cribriform plate. There is sufficient olfactory power for general purposes, but neither the horse nor the ox always discriminates accurately. There are many noxious plants that they will eat when offered to them in the form of hay, but which when fresh they would have immediately rejected. The acuter sense of smelling in carnivorous animals, and especially in the dog, is mostly regulated by the form and situation of the olfactory bones. It may be improved to a very considerable extent by education, and by breeding,—hence the varieties of dogs used in the pursuit of different animals—hence the peculiar scent of the terrier, the fox-hound, the deer-hound, the pointer, and the spaniel. Hence the hereditary excellence of certain breeds, and the entailed degeneracy of others. Much, however, is still dependent on conformation. No education could give the greyhound the scent

of the bloodhound. I select these dogs from certain points of resemblance between them—the one can hunt only by the eye, the other, perhaps, sees not his victim until he pounces upon it. We readily account for this, from the natural formation of the different animals. In the contracted cranium of the *greyhound*, there is not room for the proper development of the olfactory nerve—nor for that of the ethmoid bone in the upper portion of the nasal cavity. In the cranium of the bull-dog and of the pug there is scarcely room for any development of the ethmoid bone, and there is no species of dog in which the sense of smell is so deficient.

*The Swine.*—In him the development of olfactory power occupies a middle rank between that of the herbivorous and carnivorous animal. His teeth mark him as an omnivorous quadruped, and the organs of smell correspond with this indication. In his natural state he lives altogether on vegetable food, and it is only when he becomes domesticated that the nature of his aliment is changed. The ethmoid and the turbinated bones in the hog occupy an intermediate grade between those of the horse and the dog. There is a diminution of the cell-like structure. It is more laminated and spiral and complicated than in the horse, and a more extensive surface is offered for the expansion of the olfactory nerves; therefore, although naturally herbivorous, he is prepared to be rendered omnivorous by domestication, and there are painful stories on record of his becoming most fearfully carnivorous.

As roots form a great part of the natural food of the hog, he is furnished with a strong muscular snout, callous at the extremity for turning up the soil, and a large plexus of nerves takes its course down each side of the nose, and is ramified on the snout. A sense of a peculiar kind is probably resident here, by which the animal is enabled to distinguish with greater accuracy the nature and properties of substances hidden under ground\*.

*The Seal.*—This is another carnivorous animal, of the occasional, although rare domestication of which there are some pleasing histories on record, and a useful and attached servant he proved himself to be. Sir B. Harwood gives an interesting account of the olfactory apparatus in him. “A bone of very intricate structure occupies nearly the whole of each nostril. When viewed in front, it resembles a section of the arbor vitæ of the cerebellum. The principal trunk is attached to the rising arch of the maxillary bone, and directs its course downwards, until it approaches within one-third of its length, to the *os palati*. Eight or more principal branches arise from this trunk; and each of them is afterwards divided and sub-divided until the eye is weary in following them.

More than one hundred minute ramifications, by no means inconsiderable in size, were counted on one of the eight.

On viewing the bone in profile, it appeared that these ramifications were not merely osseous spiculæ, but the minute edges of bony plates of exquisite tenuity, about one inch in length, and one-twentieth of an inch in breadth. These laminae pass backwards, and, subdividing themselves before their re-union, terminate in a bone which is situated in the back part of the nostril. The extreme ramifications approach very closely to the *septum*, the *os palati*, the *os maxillare*, and the orbit of the eye, but without contact.

The olfactory membrane with all its nerves is closely applied to every plate of this astonishing assemblage of laminae, as well as to the main trunk, and to the internal surface of the surrounding cavity. It would be extremely difficult, not to say impossible, to calculate the superficial surface of this membrane. If we take one hundred as the average number of lamellæ on each branch, the whole number will be 800, and the two surfaces will be represented by 1600. To this we must add, at least 800 for the surface of the remaining portions of the ramified bone and the cavity. In all, there are 2400 surfaces of about one inch in length, and one-twentieth of an inch in breadth, or 120 square inches in each nostril\*. The olfactory organs of the animal must, consequently, be possessed of exquisite sensibility. There are no terrestrial animals that have yet been subjected to examination, in which there is any thing comparable with this, with the exception of the otter, but he equals not the seal.

The seal has the peculiar faculty of closing the nostril at pleasure. This is beautifully seen in the seal now in the menagerie of the Zoological Society of London. An organ of such exquisite sensibility required an extraordinary power of securing itself from injury by the voluntary exclusion of noxious matter.

*Birds.*—I have already described the origin of the olfactory nerves in some of our domesticated birds. As they proceed from the anterior apex of each hemisphere, there is no cribriform or sieve-like process for them to perforate, but they pass undivided through certain foramina in the cranial bone. Sometimes their passage can be readily traced, and then they will be seen proceeding through the orbit of the eye, and, within that orbit, bifurcating, and the two trunks of each passing on, and distributing their ramifications on the upper and lower mandibles. The texture, however, of these nerves is exceedingly soft and pulpy, and the path of the nerves is not always to be traced until they have proceeded a certain distance from their origin, when they will be plainly enough

\* Harwood, p. 23



seen. In the carnivorous birds, although the eye is keen and penetrating, they cannot always avail themselves of its agency in discovering their food; therefore their olfactory powers are exceedingly strong, whether we refer to the magnitude of the olfactory nerve, or of the auxiliary nerves, of which mention will presently be made, or of the ample provision for the distribution of these nerves. The convolutions are either partially ossified, or remain entirely cartilaginous. They are limited in their extent by the size of the olfactory nerves, and they are all covered by a highly vascular pituitary membrane, over which the nerve ramifies. In some birds, even cartilage is not found, but the olfactory apparatus is entirely membranous. This difference of mechanism does not seem to have any connexion with the degree of olfactory power, but that depends on the quantity of nervous matter which ramifies over the nostril.

In graminivorous birds the nerve is small, and its distribution is likewise confined, or at least it cannot be satisfactorily traced. In none of these birds is it very considerable.

In omnivorous birds, if the term may be used, the passage of the nerve and its increased bulk are easily to be traced; and in these respects the dissection of the heads of a duck and a turkey would be a very pleasing and useful lesson. The nervous ramifications, both olfactory, and from the fifth, or auxiliary pair—just now alluded to—spread over the mandibles both within and without, and their terminations may be traced towards the edges of the mandibles. The beaks of graminivorous birds are hard and solid, and the surrounding bones are composed of their osseous plates without the interposition of any spongy substance. The beaks of the omnivorous or carnivorous birds are still harder and stronger, for the purpose of crushing or tearing their prey; but the surrounding parts abound with cells, over which the olfactory nerve ramifies. The air has free access to these cells, and passes through them in order to reach the lungs.

In the carnivorous birds, these contrivances are carried to their fullest perfection. The whole of the upper mandible is furnished with a net-work of bony fibres, covered with a sensitive membrane, on which the olfactory nerve abundantly ramifies; and, in point of fact, on the proportional extent of cellular texture, and mucous membrane and nervous ramification in the upper mandible, each bird depends for his degree and superiority of smell.

*Fishes.*—The first observation I have to make respecting them is, that although we have irresistible proof of the acuteness of their smell, there are none of the cavities in the nostrils which are found in the quadruped. The organs of smell in fishes I cannot describe better than in the words of Dr. Grant, whose “*Outlines of Com-*



parative Anatomy" ought to find a place in the library of every veterinary surgeon. "The organs of smell are laminated—placed in cavities, or depressions excavated on the anterior part of the face, and protected by cartilages, as in higher animals, but have no posterior opening into the interior of the body, on account of the density of the element here respired. The olfactory nerves, arising alone from the rudimentary hemispheres of the brain, and provided with large olfactory tubercles, perforate the anterior part of the skull, corresponding with the cerebriform plate of the ethmoid bone, and immediately spread upon the numerous parallel or radiating laminae, covered with a delicate and extensive mucous membrane. These numerous nasal laminae, covered with the pituitary membrane, are thus more or less exposed on the surface of the face to the contact of the surrounding element; and a fold of the integuments, supported by a cartilaginous plate, generally hangs like a valve over the middle of each nasal cavity. The nasal cartilage protecting each cavity partially divides its entrance into two, so that the water passes freely through its interior, and over the extensive surface of the olfactory laminae, during the lateral motions of the head and the progressive movements of the body. By the separation of the organs of smell from the respiratory passages in fishes, their great sensibility and delicate structure are protected from the violent and incessant action of the currents of water required for respiration\*."

## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

### THE DIGESTIVE ORGANS OF THE HORSE AND DOG IN A STATE OF FASTING.

*The State of the Stomach.*—If the abdominal cavity of a horse or dog just killed, and to which no food has been lately given, is opened, the stomach will be found empty, and strangely contracted upon itself by the contraction of its muscular tunic. No motion is perceived in it. The folds of the peritoneum extending towards the greater or lesser curvature, or the epiploon, present surfaces of more than usual extent, on account of the contraction of the stomach. The bloodvessels ramifying, whether between the peritoneal laminae, or along the curvatures, or on the parietes of this viscus, seem to pursue a more than usual winding course, and

\* Grant's Outlines, p. 291.

are of diminished size. The nerves of the stomach are equally shortened and more sinuous. The external or peritoneal, and the internal or mucous tunics, present almost innumerable minute folds, projecting and curved in every direction, and produced by the contraction of the muscular coat.

*The Gastric Juice.*—In the dog the internal membrane of the stomach presents no appearance of moisture, except a few drops here and there ; some of them almost as clear as water, and others a little clouded, holding suspended some mucous flocculi of a greyish white colour, extensible between the fingers, and also adhering to the coat of the stomach.

In the stomach of a horse that had not eaten during thirty hours, we found about 1200 grains of a pale yellow liquid, a little turbid and adhesive, and in which were some white mucous flocculi. The stomach of another horse that had fasted during the same period contained about 500 grains. The liquid found in the stomachs of both the dog and the horse had a peculiar animal odour, and a slight saline taste. It scarcely acted on the tincture of turnsol, or only produced the lightest shade of red.

When, after fasting some dogs and horses, we made them swallow several small pebbles, and killed them a little while afterwards, we found the coats of the stomach contracted round these foreign bodies. If, however, the animals were not killed until some hours had elapsed, the stones were no longer found in the stomach, the contractile motion of the muscular fibres having propelled them into the small intestines, with the exception of a few that occasionally remained in the stomach of the horse.

The stomach, mechanically irritated by the pebbles, contained a larger quantity of whitish grey fluid, part of it liquid and transparent, and part somewhat turbid, ropy, and mucous. Three dogs which we had compelled to swallow the pebbles, furnished, each of them, from three to five grains of this fluid. The stomach of the horse yielded a great quantity of the gastric juice, with a few hay-stalks that were not digested.

The same fluid, abundantly obtained by compelling the animal to swallow some pieces of white flint, was very acid, and strongly reddened the tincture of turnsol, whether obtained from the dog or the horse. If, however, we compelled the dog to swallow pieces of calcareous earth or stone, the tincture of turnsol was scarcely reddened, for the free acid of the gastric juice had been partly neutralized by its combination with the lime.

It resulted from these and other experiments, that, while the animal was living, not only the mucous membrane of the stomachs, mechanically irritated by the pebbles, furnished an abundant secretion of gastric juice, but that fluid had a more decidedly acid

character than when the stomach had not been thus irritated. This was more confirmed by the action of pepper on the stomach of a dog that had been fasted. The animal was made to swallow a small quantity of pepper, and, on his being destroyed, the mucous membrane of the stomach was of a deep red colour, and furnished nearly ten grains of a greyish white liquid, a little turbid, of a slight salt taste and an acid smell, and which deeply reddened the tincture of turnsol.

As the saliva of a dog is not acid, it is evident that the liquid contained in this irritated stomach was not the fluid which he had swallowed, because it reddened the turnsol. We could not consider it as any secretion from the œsophagus, for that canal was very slightly humid both in the dogs and the horses which we had compelled to swallow the pebbles; and the slight portion of fluid that we could collect, transparent and slightly mucous, would not redden the turnsol. Viridet had previously remarked that the œsophagean secretion was not acid\*. It results from this that the physiologists who deny the existence of the gastric juice as a peculiar fluid are in error.

If any one asks, what are the sources or the secretory organs of the gastric juice, we reply that it is exceedingly probable that the liquid portion of this juice is derived from the arterial capillary reservoirs of the mucous coat of the stomach—that which is not covered by a kind of epidermis: and that the portion of greater consistence—ropy and mucous—is secreted by the mucous follicular glands which are so numerous spread over this viscus. Blasius and Viridet have already demonstrated the existence of numerous glands in the stomach of the dog and other animals. Everard Home has described and figured these glands as he saw them in many carnivorous and herbivorous animals. In the ass and the horse they are only found in that portion of the stomach which is not covered by the cuticular coat.

However, it is difficult if not impossible to establish any thing positive with regard to the liquid or mucous portion of the gastric juice, because we are not able to observe the secretion of it in the stomachs of living animals.

*Chemical Composition of the Gastric Juice.*—A great number of physiologists—ancient and modern—Wepfer, Viridet, Rast, Réaumur, Spallanzani, Scopoli, Stevens, Carminati, Baugnatelli, Vauquelin, and others, have striven hard to discover this, but their researches have not terminated in any satisfactory result. There is no animal fluid with regard to the properties of which chemists and

\* *Tractatus novus medico-physicus de prima costione, præcipueque de ventriculi fermento*, Genève, 1692. He found that the œsophagean secretion in a pig would not act on the tincture of turnsol, while that from the stomach deeply reddened it.



physiologists have published opinions so little in accordance with each other, and, even, so contradictory as the gastric juice. Some have maintained that it is acid—others that it is alkaline—and others that it is neither the one nor the other. Some of the most celebrated chemists of the age have not dared to give any opinion with regard to it, and have frankly avowed their ignorance of every thing that concerns the history of this all-important fluid.

The result of our experiments is, that the small quantity of fluid which we have found in the unirritated stomach of the dog and the horse when fasting is almost of a neutral character, or only very feebly acid; but that, when the stomach has been irritated by pebbles or by pepper, the gastric juice—much more abundant—contains a free acid, and reddens the tincture of turnsol. Viridet, Carminati, Baugnatelli, Werner, &c. have also ascertained that the gastric fluid of the mammalia is generally acid: Viridet found it so in the stomachs of dogs, cats, rabbits, hares, hedgehogs, and pigs.

Carminati observed that it was neutral in dogs and cats while fasting, but that, when these animals had eaten, this fluid reddened the turnsol. He also found the gastric juice of the pig to be acid. Baugnatelli remarked that it was acid in dogs and cats. Werner recognized the same state of the gastric juice not only in these animals but in the rabbit and the horse.

That which plainly indicates the existence of a free acid in the gastric juice is the coagulation of milk by this liquid, not only in the stomach of the living animal, but even after death. Almost every experimentalist, who has concerned himself with this subject, has recognized this phenomenon. Littré killed two young dogs while they were in the act of sucking, and he found the milk in their stomachs coagulated. He with good reason attributed this coagulation to the action of the gastric juice. Spallanzani acknowledged this power of coagulation, and observed that the internal membrane of the stomachs of these animals possessed it for a considerable period after death. John Hunter had also observed the coagulation of milk in the stomach and out of it, by means of this fluid. Carminati coagulated milk by means of the gastric juice of a pig, and Everard Home pretended to have observed it only in the neighbourhood of the pylorus, where the secretory glands were most numerous.

We have constantly remarked this property, and that not only about the pyloric orifice of the stomach but the cardiac. The coagulation was always effected in a rapid and decisive manner, when gastric juice from the stomach of an animal that had been compelled to swallow pepper was poured on the milk.

Although it is no longer possible to deny the existence of a free acid in the gastric juice of mammalia, chemists have not yet determined the nature of that acid. Some have supposed it to be of a



peculiar nature, and have called it "*the gastric acid*;" others have thought that it was phosphoric acid. Some have imagined it to have a relation to acetic or lactic acid; and, more recently, a class of chemical philosophers have pretended that it was hydro-chloric acid. The result of our experiments is, that it contains several acids in a free state.

1. *The Hydro-chloric Acid*.—We have often found this when distilling the fluids contained in the stomach, and particularly that of the horse, whom, after fasting, we had compelled to swallow pebbles. The stomach of a dog, on whom we had forced calcareous fragments, contained chloruret of calcium. If this acid was not generally found in distilling the fluids found in the stomachs of animals that had been deprived of food, it was, probably, because it existed in a very small quantity, and that, retained by some animal matter, it could not become volatilized.

Prout has lately asserted the presence of hydro-chloric acid in the stomach of the rabbit, the hare, the horse, the calf, and the dog. He, however, is wrong when he says that no other acid has been found in the fluid contained in the stomach. Lui and Children have found hydro-chloric acid in the liquid vomited by persons labouring under dyspepsia.

2. *The Acetic Acid*.—We have found a considerable quantity of free acetic acid in the gastric juice of the dog to which we had given pepper. We have also found it in the gastric juice of horses. A great quantity of it mingled with that of the horse that had been forced to swallow pebbles. The lactic acid found by Chevreul in the fluid obtained from the stomach of a man that had fasted for a considerable time, was nothing else than acetic acid; for it has been ascertained, by the recent experiments of Berselius, that the lactic and acetic acid are identical.

3. *The Butyric Acid*.—We have twice found this in the gastric juice of horses.

Besides these acids, the gastric juice of animals that have fasted contains mucus, but not albumen. At least, we have not found this last substance in the dog: but we did once meet with a very small quantity in the gastric juice of a horse that had swallowed pebbles.

The gastric juice of the dog and the horse contained an animal matter insoluble in alcohol, but soluble in water: this was the salivary matter.

We also found in both an animal matter soluble in alcohol. This was ozmazome.

The following are the salts which we found on burning the filtered gastric juice:—

1. In the dog:—Much chlorine, and a few of the alkaline sul-

phates. We never found any alkaline carbonates or phosphates. The alkali consisted chiefly of soda. The calx still contained a little carbonate and phosphate of lime, and also some sulphate of lime and chloruret of calcium.

2. In the horse:—The soluble part of the calx consisted of a great quantity of chlorine, and a small one of an alkaline sulphate. The alkali was soda with a little potash. We also found in the horse a considerable quantity of chloruret of calcium and magnesium. The insoluble portion of the calx contained carbonate and phosphate of lime, with a little magnesium, oxide of iron, and even, as it seemed to us, oxide of manganese.

The gastric juice of one horse contained, in addition to the usual ingredients, a little resin and fatty matter, and carbonate of ammonia.

## A CASE OF PUERPERAL FEVER IN A MARE.

*By* VETERINARIUS.

[This gentleman has favoured us with his address, or most assuredly his case, valuable as it is, should not have appeared.—Y.]

“ The tale that I unfold to-day  
No fiction is, but from the records pure  
Of truth has been obtained.”

MR. KING, of Stanmore, in *THE VETERINARIAN* for January, says, speaking of the cow, “I believe that no other animal is subject to this specific disorder”—puerperal fever. I will not affirm that the case which I am about to relate was absolutely one of puerperal fever; but it approaches so nearly to it, that I venture to give it that name, and must confess that it stands alone in the little compass of my experience.

On the 24th of December 1837, I was applied to respecting a mare, eight years old, that had aborted early in the morning, but had not cast her cleansing. I was not required to see her, but merely to send her some medicine. I was, however, told that she was straining very much. I gave the messenger the following drink, to be administered in warm gruel—secal. cornut., sem. anisi, sem. carui  $\frac{a}{a}$  3ij, et magnes. sulph. 3vj.

In the evening the messenger called again to tell me that, shortly after the administration of the drink, the mare produced another foal—that the cleansing quickly followed, and that she was doing well.

On the next morning the owner found her off her feed, and heaving violently at the flanks. My attendance was now requested.

I found her in a state of profuse perspiration—the conjunctival and nasal membranes highly injected—heaving considerably at the flanks—and the ears and extremities cold, with a peculiar catching up of the hind legs, and staggering gait. The pulse was full and oppressed, so much so, that I anticipated a case of pneumonia: but I could not assign any satisfactory cause for the peculiar spasmodic action in the posterior extremities. On placing myself behind her, and causing an assistant to move her forward, she exhibited every appearance of a horse with stringhalt.

I abstracted about eight pounds of blood, and gave her a ball composed of three drachms of Cape aloes, with a drachm each of digitalis and emetic tartar, and two drachms of nitre. Almost immediately after she had taken the ball, she staggered and fell. Her pulse was softer, and the extremities indicated returning warmth. The legs were well rubbed and bandaged, and a mustard cataplasm applied over the loins. She was well clothed and bedded up.

25th.—She is still down, and totally unable to rise. I now, for the first time, considered it to be a case of puerperal fever, as in cows. She had voided a small quantity of water, and the little dung which came from her was pultaceous. The cataplasm had taken effect, and the mare seemed in every other respect to be better, except that she had no power over her hind limbs. I ordered her to be still kept warmly clothed, and, as she had not been fairly purged, gave her, in warm gruel, half an ounce of Barbadoes aloes, a drachm of digitalis, and half an ounce of spirit of nitrous ether.

In the evening she was well purged, and, after an effort or two, she got up and began to eat. Her recovery was rapid. In the course of a few days she was put to light work, and has enjoyed uninterrupted health ever since.

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[Cases of palsy after parturition, although not frequent, and certainly not one of them appearing in the records of British veterinary science, are occasionally met with, and especially in country practice. They mostly follow difficult parturition, and then, perhaps, are generally to be traced to the compression or inflammation of the nerves which compose the crural plexus. This paralytic affection is seldom absent when there is any considerable degree of inflammation of the womb, from whatever cause arising. A little laxative and carminative medicine, combined with warm clothing and a warm stable, seldom fail to give relief.

The disordered motion of the hind legs resembling stringhalt deserves particular attention. In almost every severe paralytic affection the first thing observed is, the diminution of voluntary motion; to this succeeds irregular and disordered movements of

various kinds—and after this follows the complete cessation of power.

There is one history of palsy connected with parturition upon record in the French veterinary journals. An abridgment of it may not be uninteresting, particularly as giving a somewhat graphic sketch of the French mode of treatment in these cases.] Y.

## A CASE OF PARAPLEGIA IN A MARE.

*By M. HURE, M.V. 8th Cuirassiers.*

*April 24, 1836.*—I WAS requested to attend on a mare with paraplegia. She had foaled three days before. An aromatic vinous drink had been afterwards administered, and repeated on the following day; and on the day on which the second drink was given, and the day succeeding to that, she did not cease to worry herself by lying down, and immediately getting up again. About twelve hours before I saw her there was evident weakness of the hind limbs: she staggered at every motion, and at length fell without the power to rise.

On my arrival I found her lying on the litter with her eyes half-closed—redness of the conjunctiva and pituitary membrane—pulse hard and quick—respiration laborious—skin very sensible to the touch, and especially about her hind extremities—constant agitation of her fore limbs—refusal of solid food—excessive thirst—urine scanty, turbid, and dark-coloured, and obstinate constipation, which rendered the extraction of the hard and dry excrements that were accumulated in the intestines absolutely necessary.

We repeatedly attempted to raise her, but without success. The secretion of milk having diminished, or almost ceased, we procured for the young one a foster-mother. I immediately bled her, and repeated the bleeding at night, and I inserted two setons on the inside of each thigh. On account of the obstinate constipation, I gave three ounces of the sulphate of soda, and employed emollient injections. I ordered that nothing should be given to her but thin gruel with nitre dissolved in it, and some warm sacking placed over the loins.

*25th.*—A little amendment—the respiration was more easy—the membranes not quite so red—the pulse, not quite so hard, retained its quickness—the fæces were a little loosened, but the urine was deeper in colour, and voided with pain. She made repeated but useless efforts to rise.

Three pounds of blood were taken from each saphena vein—three ounces of sulphate of soda administered, and the nitrated



gruel continued: the warm clothing was also continued—frictions of oil of turpentine and essence of lavender were rubbed over the pelvian regions—and emollient injections administered.

26th.—Continuing to improve—the excrement still softer—the expulsion of the urine more easy—other symptoms the same. Continue the treatment with the exception of the bleeding.

27th.—The animal is still unable to get up, but its spirits are considerably improved; yet, notwithstanding this, the quickness of the pulse continues. The evacuations are of a normal character. Effect a slight bleeding from the neck—rub some oil of turpentine into the hind limbs, and clothe warmly. Give eight grains of *nux vomica* in powder. Allow one small feed of hay and oats.

29th.—The case proceeds satisfactorily. The setons are acting well, the quickness of the pulse is diminished, the appetite is good, and the hind limbs, hitherto motionless, can be moved in a very slight degree. I ordered several men to assist in raising her; and while she was up, she was sustained by their supporting her on either side. She was kept up nearly half an hour, and friction was well applied all over her. Give twelve grains of the *nux vomica*, and a little increase her food.

30th.—The suppuration of the setons is ample—the hind limbs can be a little better moved. We raised her, and she supported herself nearly two hours. Repeat the friction—give sixteen grains of the *nux vomica*, and continue the same quantity of food.

May 2d.—Two men are now able to lift her. When she is up, she remains fixed in one posture with the exception of an occasional slight balancing from one side to the other. The hind limbs and the croup are inclined towards the ground. The skin being a little excoriated, suspend the application of the frictions. Twenty grains of the *nux vomica* were given.

3d.—With considerable difficulty the patient rose without assistance, in order to get at some grass which I held to her. She walked a little, but very slowly, for the stiffness of her hind limbs was still very great. Resume the frictions with ammoniacal liniment instead of turpentine—gradually increase the quantity of *nux vomica*, and give her a little green meat.

6th.—She has walked—slowly indeed—between two and three hours to-day. Continue the friction, and gradually increase the *nux vomica*.

15th.—Two of the setons were removed—the *nux vomica* increased to forty-two grains, and the frictions continued. Rapidly improving.

21st.—All treatment has ceased, and, although she walks rather stiffly, she has been able to do a little work with the harrow. She gradually recovered all her former speed and strength.

The immediate cause of this paralytic affection, or connected with its occult cause, was the obstinate constipation and difficulty of voiding urine which existed; and these were caused by the tonic excitants that were given to the mare after parturition. Why employ so often, and so prejudicially, these stimulating drinks, which can rarely produce good effect, and are almost invariably fraught with evil? Why, above all things, give them after a successful parturition? It were to be wished that the persons charged with the care of these animals at the time of labour, would think less of the weakness of the patient, which rarely exists, and more of the extraordinary excitation of the vital powers, which, in the majority of cases, is the evil to be dreaded. That which induces me to think that an error of this kind was the cause of the disease, is the rapid good effect which was produced by the antifebrile system pursued. I do think that the system of purgation which I adopted, in order to soften the indurated contents of the rectum caused by the exhibition of tonic excitants and the peculiar action of the *nux vomica*, materially contributed to the fortunate result of the case.

*Rec. de Méd. Vet.*, 1836, p. 285.

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### A CASE OF CARDITIS.

DROPSY OF THE PERICARDIUM AND DISCHARGE OF TARRY  
FÆCAL MATTER.

*By Mr. W. A. CARTWRIGHT, of Whitchurch.*

A COW belonging to Mr. Beckett, of Hoss Green, has had the garget in the off-hind quarter for nearly two months, and a great quantity of matter has been discharged therefrom. Latterly it has been very much lessened in size, and appeared to be got nearly well, and she was come to her milk almost as perfectly as before her calving. On Sunday night, the 20th of August last, when she was fetched up to be milked, she yielded a little less than usual. This, however, was thought little of, as she had varied in consequence of the garget. She was then turned out with the rest of the cows, and was going to be put with them into some hedgerow for the first time (she had lately been with another cow in a barer pasture near the house). The other cows were put in, but the cowman, observing a black tarry discharge from the anus, and suspecting that there was something the matter with her, similar to one that died awhile before, she was turned back; but before she had walked far she fell down, got up again, and fell once more. The fleams were immediately fetched: about six quarts of blood were taken from her, and twelve

ounces of castor oil administered. Previous to her falling she was observed to go with her nose near to the ground, and thus discharge the tarry matter. Her heart beat most violently when she was down, and there could be heard, the owner said, "a sort of rustling noise thereabouts." After the bleeding she had two strong fits of trembling, but the violent beating of the heart in a great measure subsided. Her respiration was not at all hurried. I was sent for, and arriving there about nine at night, found that she had died about half an hour after the master had started to fetch me.

*Post-mortem examination.*—At 6 o'clock on next morning I opened her. The paunch was nearly filled with masticated grass—so was the second stomach. The third was full, not staked, and healthy. The fourth was full of fluid of a red-brown colour, and floating in it there was about a handful of, to all appearance, rush seeds and pieces of the stalk, and the whole had a most offensive smell, inclining to a sourness. This stomach did not seem inflamed, but was a little darker coloured than usual. The whole tract of the bowels contained a quantity of unhealthy mucus of various colours, and also a great deal of tarry feculent matter. In the commencement of the small intestines the contents were thinner, and mixed more with mucus. Further on the contents were principally of a blackish cast, and liquid—further on still they were inspissated, and had that peculiar appearance of tar, or rather of a very dark olive colour, and were very sticky. The mucous membrane was very soft in different places, thickened a little in some parts, and in others streaked, dark, and discoloured, but they did not exhibit any marks of active inflammation.

*The liver* shewed a little chronic disease, but not of much consequence. *The gall bladder* was full of healthy bile.

*The heart.*—The pericardium contained nearly a pint of bloody coloured serum. On the external surface of the heart there were many patches of ecchymosis, and some extended into the substance of it; in other places it had a peculiar freckled appearance of a bloody deposit. On the internal surface of each ventricle there were also, perhaps, thirty spots of ecchymosis. There was no blood in its cavities.

*The lungs* were completely blanched and sound. *The brain* was sound.

*Observations.*—About six weeks before another cow that stood next to this in the cowhouse was taken as suddenly ill. She was noticed to have, for a day or so, the tarry discharge in a greater degree than in the case now related. She was then sold to a butcher through fear of the consequence, more upon the principle that "the first loss was the best" than from the general appearance of serious disease.

She was immediately taken away, but before she had gone a mile or two she fell, was bled, got into a boat, and afterwards bled to death in it, as she was expected to die. When she was opened, I was informed that the whole of the body was covered with patches of effused blood, but especially the intestines, and which were filled with the same dark tarry matter; but as I did not see it, I cannot give any better description of it.

Now, from the similarity of the attack and the suddenness of their death, I am inclined to think that it was the same disease, although the first cow was worse affected over the whole of the body than this one was. The owner thinks that may be accounted for by her being of a stronger constitution, and the disease having existed longer in her; and the other being bled as soon as the illness was perceived. In each of these cases there was no violent purging or *apparent* active disease going on. They walked about as usual, merely discharging, in the first that was taken ill, the dark *fæces* occasionally; while the same was only once or twice seen in the other. There was no quickness of respiration, or any thing to point out the slightest existence of disease. In short, she was walking about as well as usual nearly up to the time of falling, and nothing to cause suspicion except the slight abatement in milk and the discharge from the anus\*.

## THE USE OF HYDROCYANIC ACID AND HYOSCIAMUS NIGER IN TETANUS.

*By J. P. ST. CLAIR, Esq. Morpeth.*

IN presenting you with the following case of Idiopathic Tetanus, I do not consider that I have made any discovery. I have merely substituted for a supposed remedy, frequently employed, another possessing some properties similar to it; and I have adopted mercurial frictions in combination with sedatives, in lieu of the too general practice of blistering the spine. In the internal treatment, opium has been dispensed with on account of its astringent properties, and hydrocyanic acid and hyosciamus have been substituted. Neither of these remedies possesses any astringent property, and if they are certain and powerful in their effect as sedatives, they are far preferable to the opium.

We know that prussic acid is a most powerful sedative, and that hyosciamus possesses all the properties of opium without its

\* Will some of our country practitioners on cattle kindly throw some light on these singular cases?—Y.



astringency. If there is one principle in the treatment of tetanus more important and more universally admitted than another, it is, that little or no benefit can be expected until the bowels are freely opened; and they will certainly be more freely and speedily operated upon if every thing possessing an astringent property can be dispensed with. Having dispensed with the use of opium, I have found little difficulty in obtaining this object. The bowels have always been well opened in about thirty hours, and often in much less time, and they have been kept sufficiently relaxed by the administration of a few drops of croton oil.

It may be deemed presumptuous in me to recommend the disuse of vesicatories, although I am certainly bound to advocate a method of treatment that I have found successful. Instead of blistering the spine, mercurial ointment, strongly impregnated with hyosciamus was well rubbed at intervals on the inside of the thighs. My reason for abandoning the use of blisters is, that tetanus is a disease accompanied by violent irritation; and if remedies can be dispensed with that are attended by, or do produce local, and increase general irritation, such a mode of treatment is worth a trial. Blistering, I do admit, appears to be indispensable when softening of the spinal cord is to be dreaded; but I think that is rarely or never the case in idiopathic tetanus. If it is at any time the consequence of this disease, it must be of a traumatic description.

The subject of this case was a grey gelding, seven years old, in good condition, and well known in the sporting world. I saw him on the 28th of December last. He exhibited every symptom of tetanus. The teeth were closed to within half an inch—the tail elevated and quivering—the nostrils raised and expanded—the respiration quickened—the pulse full, strong, and about 60. He frequently broke out into violent perspirations, and he started at every motion and noise.

I abstracted nine quarts of blood, and administered eight drachms of aloes in solution, with two drachms of hyosciam. nig. and twenty drops of croton oil. Injections were thrown up—he was clothed warmly, the box was cool, and he was kept as quiet as possible. The medicine was administered by means of a long small horn, the top of which was cut off, and the base closed with a cork.

29th.—No amendment—the teeth now firmly closed—the general irritation increased. The draught repeated, ten drops of the croton oil being omitted, ten drops of hydrocyanic acid substituted. Apply the mercurial ointment as already described to the whole of the inner part of the thighs.

30th.—The bowels freely acted upon, and the general irritation

not quite so great. Give three drachms of the hyosciamus in solution, with twelve drops of the hydrocyanic acid, and repeat the ointment.

31st.—The general symptoms about the same. Repeat the draught morning and night, with fifteen drops of the acid.

*January 1st, 1839.*—Bowels a little costive. Give eight drachms of aloes in solution, and continue the hyosciamus and prussic acid morning and night.

It would be tedious to give an account of the daily symptoms and proceedings. The medicine was administered morning and night, and the bowels were kept in a somewhat relaxed state, until he began decidedly to amend, which was about the ninth day: the quantity of medicine was then gradually diminished. My patient was led out of his box on the twentieth day. He straddled a little in his gait; but this gradually wore off, and he proceeded on his journey to the stud of his noble owner, at Melton Mowbray, on the twentieth day that he first came under my care. I may here mention, that the horse was on a journey from Berwickshire to Leicestershire. He first refused his food at Newcastle-upon-Tyne; and I did not see him until the fifth day from the time that the complaint had first manifested itself.

Much light has been thrown upon this complaint by Mr. Karkeek; and with his opinion of its primary seat I perfectly concur. Having become a disciple of Mr. Karkeek, I am of opinion that idiopathic tetanus is merely a consequence of another disease; for if the bowels were not affected, and seriously too, why should constipation be such an invariable symptom? and when the bowels are once fairly opened, there is always a mitigation of symptoms. Although I did not observe any of those dropsical abdominal enlargements mentioned by Mr. Karkeek, yet I doubt not that, if I had adopted his mode of treatment, they might have been established.

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#### CONSULTATIONS—No. I.

[The connexion between the veterinary preceptor and his pupil ceases not when the latter has gone far away, and settled himself in practice. The former will ever feel interested in the welfare of the latter, and eagerly avail himself of every opportunity to promote his interest; the student will not forget the valuable instructions and uniform kindness of his preceptor, and anxiously apply to him for advice in many a doubtful case of conduct or of practice. An intercourse will be established honourable to both, and recalling much of the pleasure of by-gone days.]

Some of these consultations we have recorded in previous numbers of our Journal. We will add to their number as opportunity may permit.

Occasional letters from employers requesting assistance or advice will not be excluded. With how many of these might our country correspondents supply us! The first letter will be of that character. The name of the applicant will be given or withheld, according to circumstances.] Y.

#### AFFECTION OF THE PAROTID OR NEIGHBOURING GLANDS.

"For some months past my young cattle have been troubled with swellings of a peculiar character about the neck and throat. The case begins with a small tumour about the angle of the lower jaw, which continually increases in size. It is hard to the touch, and partially moveable under the skin. The animal falls off in condition, and, as the disease advances, is afflicted with foaming at the mouth, and other symptoms, which seem to indicate an internal affection. No cause that I am aware of can be assigned for the production of this disease.

"Out of a lot of fifty cattle, purchased for a neighbouring proprietor and myself, twenty-five were drawn for me. Of these thirteen have become affected, while those of my neighbour remain sound.

"All means in my power have been used to remedy the complaint. The tumours have been cut out, and the butyr of antimony applied to the wounds. Setons have also been passed through the neck, but are without avail.

"I may mention, that the cattle were purchased in October last, and kept on young grass until November. They were then brought into a court, and fed on turnips and straw. Within the last few days the diseased have been separated from the other cattle, and sent to a farm, where they will have oat straw to feed upon, in order to try what effect it may have.

"May I request that you will kindly favour me with some information with regard to the cause and treatment of this disease, and the proper means to be adopted for its removal?"

"February 21, 1839."

#### REPLY.

The disease with which your cattle are afflicted depends on some particular exposure to atmospheric influence; generally having relation to the whole farm, but occasionally confined to the homestead alone. If this obviously applies to your case, which I think is very probable from your friend's lot of cattle not being affected, the

means of prevention are sufficiently evident—and prevention is at all times better than cure. A description of your locality would enable me better to judge respecting this point.

I am rather surprised that you have failed in effecting a cure when the tumours have been cut out at an early stage, as that proceeding has commonly succeeded. I should not have expected much from the setons, unless they had been passed through the substance of the tumours. Butyr of antimony should not have been applied when the tumours were cut out; for if this was neatly and cleanly done, the incision ought to have been allowed to heal as a simple wound. If any caustic had been adopted, it should have been caustic potash, so as to have formed an issue. This is done by trimming off the hair, wetting the surface of the skin over the tumour, and applying the end of a piece of the caustic until it penetrates the skin, or destroys it so as to cause a sloughing to come away. When that is accomplished, which will be in one or two days, a fresh dressing may be applied, so as to penetrate into the substance of the tumour. The dressings should be renewed daily, and, after two or three days, the wound may be allowed to heal.

An ointment composed of one part of hydriodate of potash and eight of lard, rubbed daily and well on the part, will sometimes cause the absorption of the tumours. Of late I have been using the iodine in double this proportion, and with decided good effect.

W. DICK.

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### FISTULOUS WITHERS.

My dear Sir,

You would much oblige me by your advice with regard to a severe and protracted case of fistulous withers. The spinous process of the fourth vertebra was fractured by the bite of a carriage horse. The case was neglected, or badly treated, for four months, when it was put into my hands.

After securing the animal, I removed the diseased parts, scraped the bone which had become carious, and could then perceive that the disease was deeply seated between the base of the shoulders.

The treatment, after the operation, consisted of warm fomentations, and a wash of a solution of chloride of lime. The wound, extensive as it was, healed, except that there remained a small opening, from which issued a fluid of the consistence of cream. This continued during three weeks, when I operated a second time, cauterized the parts, and introduced a seton from above, carrying it obliquely forwards and downwards.

The seton was removed ten days ago, and the parts are closed,



with the exception of a small opening of the size of a quill, from which there is still a discharge, evidently from the diseased bone.

I remain, my dear Sir,

Your most obedient servant,

JAMES TINDAL, V. S.

February 26, 1839.

### REPLY.

Dear Sir,

I am afraid that, in the case you refer to, I shall be unable to render you much assistance after what you have already done, further than to suggest a repetition of the operation. Before this, however, I would try the effect of some injection well forced into the sinus with a syringe. For instance, you might take a solution of corrosive sublimate, in the proportion of seven grains to the ounce of water, and inject it once or twice a day for a few days. If there is no appearance of improvement, increase the sublimate to ten grains. An injection of tincture of cantharides might be worth a trial for a few days, or a little muriatic acid much diluted with water.

If you suspect that a portion of the bone may be still diseased, and the sinus is not so deep but that you can reach to the bottom of it, a small piece of caustic potass, or lunar caustic, may be introduced and immediately withdrawn. Even sulphate of copper may be used in the same way, and has often good effect.

I am afraid that there is something at the bottom of the sinus, which must be got rid of—perhaps a little bit of carious bone, or a loose piece of cartilage or ligament, or else the orifice is not dependent, or the seton has not passed through the lower portion of the sinus. Sometimes the washing out of the sinus by the injection of warm water brings away any loose bony or other matter.

Have you tried the effects of pressure, or can it be done, so as to compress the whole course of the sinus? A splinter sometimes enables this to be effected. Exercise should not be taken if it can be prevented, as the play of the parts may prevent adhesion.

You do not mention where the present sinus opens.

If it should be necessary for you to open the wound afresh, you must endeavour to excise every portion of bone that is diseased. A small saw, not exceeding two inches in length, would probably effect this. If every diseased or loose portion can be removed, it is most likely that the parts will heal up at once as a simple wound. If the bone should prove to be not diseased, a blister might be serviceable.

W. D.

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## ON CAOUTCHOUC AS A SUBSTITUTE FOR LEATHER IN SHOEING.

By JAMES W. WINTER, *Esq. V.S. Byfleet.*

BEING well aware of the destructive effect of the common iron shoe on the foot of the horse, and conscious that any attempt, however trivial, made with the intention of obviating those evils, would not, if successful, be considered "frivolous," although the contrary might be held somewhat "vexatious;" the removal of a portion of the sufferings which are the well known sequence of concussion is the object of this communication. The consummation of such an object would amply repay any trouble that could be bestowed upon it.

With this view I was induced to make some experiments with *caoutchouc* as a substitute for leather, now very generally employed in shoeing, and the results, although at first of a discouraging nature, ultimately assumed a satisfactory character.

The well-known elasticity of this substance, together with the analogy of its nature and consistence with the natural state of some parts of the foot, seem to point it out not only as a remedy in abnormal states of this organ, but as a conservative application in its more healthy condition. To the physical property of elasticity, although only partially possessed by leather, may be attributed the chief benefit, if not all the advantages, derivable from the use of it: it is a spring interposed between the shoe and the foot, which, diminishing the force of concussion, obviates a portion of its evil effects.

A great recommendation of the adoption of *caoutchouc* will be on the score of economy, for though at present a little dearer than leather, travellers in the land whence it comes relate that the supply is inexhaustible, and would be equivalent to the most extensive demand\*. The old portions may be again dissolved, and rendered serviceable, consequently the waste is inconsiderable.

*Caoutchouc* is a non-conductor of electricity, and probably may possess some protective influence over the various delicate tissues

\* "A sufficient quantity of *caoutchouc* might be collected in the missions of the Oronoko alone for the consumption of Europe."—*Humboldts' Pers. Nar.*

"If ever there should be a great demand for large supplies of gum-elastic, commonly called Indian rubber, it may be procured in abundance far away in the wilds of Demerara and Essequibo."—*Waterton's Wanderings in South America*, p. 302.

and beautiful organism of the foot. The debilitating effect of metallic contact is known and well appreciated by the human physician.

It may be used either in the form of a plain sheet, of the thickness of leather, or increased in substance over the heels and frog. Sometimes I have employed it as an adjunct with leather, but more frequently as a substitute for it.

Of the different sorts or varieties of caoutchouc, I found the South American the best suited to my purpose; the species procured from the *urecola elastica*, and brought from the East India islands, being too hard and inelastic.

Water of the ordinary temperature has no action on this substance. I conceive that much precaution in the useful application of it is only necessary in frosty weather, when, from the slight contractive effect of excessive cold upon it, it may be useful to plunge the lower surfaces of the feet into tepid water before going out, which restores its natural elasticity.

If it should be thought worthy of trial by my professional brethren, any suggestions as to the further perfecting this application, through the medium of your periodical, or otherwise, will be kindly acknowledged.

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## ON THE FOOT-ROT IN SHEEP.

*By Mr. T. LEES, Southshore, Blackpool.*

Sir,—ON reading your valuable work on the diseases and management of sheep, I was very much surprised at the different opinions stated as to the cause and contagiousness of sheep-rot. Of the cause, so far as the pasture is concerned, I will give you a history as it regards one flock. I could scarcely have thought it possible that any one accustomed to sheep should have doubted its contagiousness. The story which I am about to tell bears, perhaps, on both points.

I was shepherd six years where the flock was sadly afflicted with this dreadful disease. It was a large farm in Herefordshire, on the borders of Radnorshire and Shropshire, and the flock consisted of between 600 and 700 half-bred sheep between the South-down and New Leicester. In one large pasture is a considerable plantation on the top of a sloping hill facing the sun. The pasture itself is as sound a turf as any in the world, an unsound sheep never having been known on the farm. When the trees were first set, the plantation was fenced in from the field; but, seven years ago,

they having been large enough to be out of harm's way, it was thrown open. The sheep then got into it, and spent the greater portion of the summer-day in its shade. This plantation, although on the slope of the hill, is almost continually wet—partly from the dung and urine of the sheep, and partly from the rain that falls there, and the sun and the wind not being able to penetrate to the middle of it to dry it.

The consequence of the throwing open of the plantation was, that the sheep that were pastured in that field were afflicted with foot-rot. They had never been off the farm, nor had any other sheep but those of the same flock been with them.

Being now accustomed to the pasture, they still are subject to the foot-rot, although not so universally, nor in so inveterate and destructive a form, and as they grow up they obtain a kind of immunity from it; but every sheep that comes there has it, and every lamb that is bred there. The rams that are brought from different places, being always examined in order to see whether they are free from disease, are no sooner put to the ewes than they have the foot-rot, and so badly that it sometimes requires a fresh ram to every lot of ewes almost once a week. They come quite sound, yet in that little time they get so lame that they are not able to walk after the ewes, in order to impregnate them.

Some persons have had yards spread with lime, into which they have driven the infected sheep, and kept them there for a considerable time. They are said to have derived benefit from this. On the farm to which I allude, some of the advertized powders were used, which kept the disease from proceeding to any serious length; but the labour of continually dressing them was really immense.

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[We thank Mr. Lees for this practical illustration of foot-rot in sheep. We ask not whence our knowledge of the truth arrives? It is as valuable when coming from the shepherd as the veterinary surgeon, and will be as thankfully received. Why is not this plantation once more enclosed. The comfort of the shelter which it affords is far too dearly purchased. For the cure of foot-rot, the shepherd will find all that he wants in the butyr of antimony and removal to a drier pasture, and without any great expenditure of labour.—Y.]

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## ACARUS SCABIEI.

CAN MAN CONTRACT THE ITCH FROM BRUTES, OR THE LATTER FROM THE FORMER?

By C. HOLTHOUSE, *Esq.*, *M.R.C.S.*

THE above evidently embodies two distinct queries. First, is the itch communicable from animals to man? Secondly, Admitting or denying this to be the case, does it follow that the latter can or cannot communicate scabies to the former? We will direct our attention at present to the first of these questions, viz., Can a mangy animal communicate scabies to the human subject? Before entering *in medias res*, I would premise that this is not contrary to analogy, but is rendered probable by what is known and admitted to be the case with regard to vaccinia, rabies, and glanders. This probability is strengthened by what has been observed of the habits and properties of those acari which infest man and animals:—they attach themselves readily and almost immediately to any object which is placed in their way, and they are remarkably tenacious of life, especially those of the sheep and horse. It is highly probable, therefore, that, when transplanted from one animal to another of a different genus, they may continue to live for a considerable period under circumstances so nearly allied to their natural condition, and yet be incapable of producing another generation. We will now see whether any evidence can be adduced in confirmation of this opinion. Instances of the horse acarus being communicated to the human subject have been recorded by many writers; among others, by E. Viborg\*, Sicht†, and Greve‡. The following case, which I have taken from Dr. Willis's translation of Rayer's work on Cutaneous Diseases, was first published by R. Fauvet, in the *Annali Universali di Medicina*, 1823, and has been thence copied into several French and German periodicals:—

“In the month of January 1820, a farmer bought a horse affected with the itch at the market of Bergamo, which he mounted to return to his home. The day after his arrival, he experienced great itchiness over almost the whole of his body; the same symptom was further complained of by his son and a friend who had accompanied him to market. The stable-boy, too, to whom the horse was given in charge, began to scratch himself incessantly within

\* Sammlung von Abhandlungen.

† Erfahrung und Beobachtungen über die krankheiten der Hausthiere. Oldenburg, 1818.

‡ Unterricht für die Landwirthe zur Abwendung und Heilung der in Kriegezeiten vor kommenden Viehkrankheiten. Berlin, 1807.

two days; so did a labourer, who had used the brute in some field work during a few hours: and this went on till more than thirty persons, and several other horses attached to the farm, were infected with itch. The mangy animal was therefore got rid of, and being sold to a miller, he and his men were forthwith attacked with itch, merely from having put their hands on the back of the purchase. A cow also, which had rubbed her neck against the manger of the horse, contracted itch like the rest." Hertwig\*, of Berlin, relates that he once saw the disease communicated to a horse by a cat which had lain on his back while he stood in the stall. The same authority declares that he himself has had personal experience of the infectiousness of this disease, and relates the following experiment which was made by Herr Schade, a veterinary student of Berlin. Eight horse acari, of both sexes, were placed on the skin of the arm, and confined there by a piece of fine paper fastened on by means of adhesive plaster: "Five minutes after, a terrible itching arose, which continued, with periodical increase and decrease, for five days. After the lapse of thirty-two hours, only four of the acari were to be found on the skin. Several elevated red spots, of the size of a pin's head, were, however, visible on it; and on one of these, the head of which was slightly tinged with yellow, were two minute eggs, while, in the neighbourhood of these spots, were to be seen small hair-like passages. On the fifth day these passages were more perfectly formed, and were easily perceptible with the naked eye. One of them was nearly three-fourths of an inch long, and divided at the end like a fork; they all looked like smooth, red, slightly elevated lines, passing in different directions. When cut through with a lancet, they were found to be hollow, and sometimes in and sometimes immediately under the outer skin. On these passages, or rather near to them, were small bladders, which contained a clear fluid. The acari were neither to be found on the skin nor in the passages or bladders. From the fifth until the twelfth day the irritation gradually diminished, and at length entirely ceased. The bladders gradually dried up; the passages became less visible; and on the twelfth day the upper skin appeared covered with little dry scabs, which easily loosened themselves, and left behind a healthy skin."

Professor Hertwig remarks on this experiment, that it proves that horse acari will pass on to the human being, and thereby cause an itchy eruption on the skin; and, also, that in many cases the disease is not of long duration, and will get well of its own accord. But, in opposition to this last inference, Greve states that in many cases the disease produced in the human subject by horse acari will last from three to eight weeks.

\* Veterinarian, vol. xi. (vol. vi, New Series.)

We have hitherto confined our attention to cases of scabies communicated from the horse to man; but are horses the only animals capable of communicating it? The following facts will answer.

M. Biett\* relates that, in 1827, ten *employés* of the Musée d'Histoire Naturel were admitted into St. Louis, very severely affected with itch, which they had contracted from some camels they tended that had recently arrived from Africa; he likewise mentions another case of a child, not quite four years of age, who had evidently contracted the disease from a dog which he was constantly caressing. M. Fournier, in the article "Gale," of the Dict. des Sciences Médicales, and M. Rayer, in his work on cutaneous diseases, both refer to a case of scabies, which was produced in one of the *gardiens* of the Jardin des Plantes, who was charged with preserving the skin of a phaseolome, that had been accidentally killed by the elephant while labouring under mange. Sauvages† speaks of a Scabies canina, and S. felina; and after describing the symptoms of the latter, which were observed in an epidemic that prevailed among cats, observes, "Morbus contagiosus erat; interea qui seorsim custodiebantur ab hoc immunes non erant." Dr. Mason Good‡, in his Study of Medicine, has recognized a variety of scabies, contracted from animals; he names it S. exotica, and thus characterizes it:—"Eruption, chiefly of rank, numerous pustules, with a hard inflamed base, rendering the skin rough and brownish; itching extreme; abrasion unlimited, from excessive scratching. Produced by handling mangy animals§." Bateman, too, although he has not classed it in his Synopsis as a distinct species, yet, in his Delineations of Cutaneous Diseases||, gives a drawing of what he calls S. porcina, from the circumstance of the man whose case it was intended to illustrate having contracted it from a mangy hog. These are but a few of the cases upon record; but I think they are sufficient to give an *affirmative* answer to the question we set out with, viz. Can a mangy animal communicate scabies to the human subject? It must not be denied, however, that several writers have contended for the impossibility of the transmission we have been speaking of. "Rayer," says that skilful veterinarian, Leblanc, "shewed MM. Sabatier, Littré, and himself, several itchy dogs, calling their attention to the fact, that the man

\* Dict. de Médecine, art. Gale. † Nosol. Method. ‡ Vol. v, p. 648.

§ Professor Hertwig states, that the most important difference between this variety and the ordinary itch consists in the former spreading over the face and head, which is not the case with the latter. It is also generally agreed to be more severe; and, if Chabert is to be relied on, this holds good with regard to the itch that is produced in an animal from one of a different genus: he says, when the horse and sheep contract it from the dog, it is exceedingly obstinate, and often produces terrible effects.

|| Plate 46.



by whom they were tended and rubbed had not contracted the disease in the present and many preceding instances; while a dog, from having slept on the straw which had littered one of the mangy animals, was seized shortly after." The experiments of Gohier, who endeavoured to inoculate animals of one genus with the acari of another, tend likewise to strengthen this opinion. But it is time we turn our attention to the remaining part of the question, viz. Can a man affected with scabies impart the same to a brute? Some writers assure us that dogs have contracted this disease from their masters; but I have been unable to meet with a well authenticated instance of this upon record, nor has such a case fallen within the observation of that distinguished veterinary surgeon Mr. Youatt: yet, if we admit the possibility of acari from animals locating themselves on the human subject, and producing thereby an itchy eruption, bearing so strong a resemblance to scabies that all authors have agreed in giving it this name, it is surely not impossible that the *sarcoptes hominis* may have been transferred to animals, and thus produced in them an analogous disease. But this is arguing for the parasitic origin of scabies; which if we deny, will oblige us to seek for some other cause to explain the transmission we are supposing to take place: in this case I grant the possibility is considerably diminished, for we must then presume the fluid of the mangy sores to be the contagious principle—a presumption highly improbable. If the serosity taken from the vesicles of scabies in the human subject is inadequate to produce that disease in an individual of the same species, *à fortiori* it must exert still less power in inoculating animals which are confessedly and notoriously exempt from the contagious influence of morbid human poisons. Except the saliva of a rabid man, I am not aware that any other morbid fluid of our species is capable of communicating a disease to the brute analogous to that by which it was secreted: two of the most active and baneful of these poisons, to wit, those of syphilis and variola, produce no effect when applied to the organs of generation and skin of animals. With these facts before us, then, we are bound to reject this explanation of a not improbable hypothesis. What now is the *resumé* of this and the two preceding letters, and what conclusions may we thence deduce?

1st. That parasitic insects, called acari, or *sarcoptes*, are met with in many cases of scabies, but in no other disease.

2d. That our not being able to detect them in every case, does not warrant us in denying their presence at some period or other of the disease; nevertheless, till such presence be demonstrated, we are justified in withholding our assent to their being the sole cause of scabies.

3d. That the acari are never found within the vesicle or pustule,



but at one of the extremities of small hair-like passages, "cuniculi," in the vicinity of the vesicles or pustules.

4th. That, placed on the skin of a healthy individual, they excite a disease in the part to which they are confined, having all the characters of scabies.

5th. That acari taken from mangy sheep, horses, and dogs, and transplanted to healthy individuals of the same species, produce in them a disease analogous to that in the animals from which they were taken.

6th. That the fluid contained in the vesicles or pustules of itch, and in those of mange, fails in producing these diseases when rubbed into, or inserted beneath, the skin of man and animals.

7th. That there are too many well-attested cases on record to permit us to doubt of scabies having been communicated from animals to man; yet there is evidence to prove that mangy animals may be handled with impunity by some individuals.

8th. That itch may be communicated from man to animals is not improbable; but we have no facts at present to verify this supposition.

*Medical Gazette.*

## THE MULE.

[We extract the following paper from that truly valuable monthly periodical, "The Farmer's Magazine." There is scarcely a number of it which does not contain something interesting to the veterinary practitioner; and we cordially recommend it to the attention of our brethren.

This Essay on "Factitious or Mule-bred Animals" was originally inserted in "*The Exeter Flying Post*."] Y.

I BELIEVE it to be a fact generally admitted, that it is beyond the reach of human ability to exceed the limits prescribed by nature, by uniting two distinct species of aboriginal animals, and thereby producing a factitious one capable of reproduction. I say, of reproduction; because on this capability alone does the weight of my argument repose; considering it the only criterion by which actual proof can be satisfactorily established.

We must all admit that the great Author of the universe, in his unspeakable mercy and condescending goodness to gratify the wishes of his favoured created being—Man,—has permitted him to indulge his desires, or to carry his researches so far as to allow the breed of a factitious hybrid animal by one cross; but here, I contend, and shall endeavour to prove, the bar is fixed. "Thus far shalt

thou go, but no farther;" this is the extreme limit, the *ne plus ultra*, the unerring dictum of the great "I AM," from whose tribunal there is no appeal, and to which all human theories must be compared as to the small dust in the balance; for here it is evident that the super-ruling power maintains its pre-eminence by the infallible obstacle of rendering the produce sterile.

My first remarks shall be on the domestic mule, an animal well known in every part of the kingdom: I doubt, however, whether its usefulness is so duly appreciated as it merits, though those who do employ mules estimate their value. One valuable property they peculiarly possess not observable in the generality of mongrel breeds, which is that they far exceed the natural longevity of either of their parents, and frequently of both; if we compute the age of the horse to be thirty-five, and the ass, forty. Many instances have been attested where the mule has attained the age of seventy and upwards; one, in particular, at the Iron-works at Colebrook-dale, where there were three or four known to have been employed on the works upwards of sixty years. This I was assured by one of the proprietors.

Another valuable quality is, that they are less liable to disease and capable of much more bodily exertion than either the horse or the ass; and being nearly as abstemious as the ass, they are reckoned of much greater value than either of them, where power is wanted with economy.

Of their capability of enduring bodily fatigue, I beg to adduce a few instances out of the numbers that have fallen under my notice. Messrs. Joliffe and Banks employ two or three teams of English-bred mules to draw their lime from Mersham, in Surry, into London, a distance that cannot be computed at less (taking the average of the places where they unload) than twenty-two miles, which is forty-four miles a-day, as they go six turns in the week, commencing at one o'clock on Monday morning, and ending about ten on the Saturday night; that is, working at least fourteen hours out of the twenty-four. The late William Cobbett, when living at Botley, sent his fat lambs and other farming produce to London in a caravan drawn by mules, the distance, at least, sixty-two miles. This, he assured me, they generally performed in ten hours, only baiting once for one hour. Now, I would query, where are horses to be met with that could do this? They, generally, during the season, went twice a-week, and worked on the farm during the intermediate days.

A friend of mine (a partner in a London porter-brewery, Taylor and Co., Rotherhithe), some years ago, purchased six mules from his father's iron-works, in Wales, neither of them exceeding fourteen hands. He employed them in their drays, three in each; and

he assured me that they drew the same load, namely, three butts, as the other teams of three horses—that they stood their work equally well, and at about half the expense of keep. Notwithstanding, owing to the singularity of their appearance, they could not get suitable men that would drive them, and for no other reason they discontinued to use them. So much for prejudice.

I need not say more as to their utility, though I am aware of some objections that may be urged in their disfavour. One is, a quality derived, doubtless, from the ass, namely, an unconquerable obstinacy in resisting ill treatment. No severe usage can possibly induce a mule to go forward when it is not inclined to do so of its own accord, though gentle and kind treatment, generally speaking, will. It would be a fortunate circumstance if all our other beasts of burden were endowed with the same kind of spirit; for, in that case, the feelings of humanity would be less frequently outraged than they are at present. Another objection, and which is by far the most valid, is, the diminutive size of the general English breed—by no means calculated to conciliate the public favour, mules being mostly bred from small mares and the English ass. In this case the progeny can never be expected to exceed the height of the ass, or more than the medium between the sire and the dam. All that appears requisite to bring them into more general use is, to increase their substance and height, which can only be effected by importing male Spanish asses, and breeding from large-sized mares. These would produce a stock of sufficient power for any purpose, and, I do not hesitate to say, the most profitable stock that can be reared.

About forty years ago, a Mr. Eccleston, of Lancashire, adopted this plan; and I understood it succeeded. Why his example was not followed I must leave unexplained—probably it was from the difficulty of procuring a Spanish ass. I think no other reason could operate, as no doubt, I expect, can exist as to their superior utility for carrying burdens, and also for draft, where speed is not required. At a step of six or seven miles an hour they are remarkably safe and sure-footed, seldom making a false step, but the reverse is the case when rode or driven very fast. This I have remarked in many instances, besides in two of my own, both capable of trotting twelve miles an hour, and remarkably safe, for a few months at a quick pace; but they afterwards both repeatedly fell, even on excellent roads, and it could only be accounted for owing to a rigidity of the muscles of the legs, communicated, doubtless, from the ass—an animal never designed by nature for swiftness, and, therefore, not furnished with elasticity of muscles similar to the horse.



## CASES OF THE SUCCESSFUL TREATMENT OF BURSAL ENLARGEMENTS BY PUNCTURING.

*By HARRY DAWS, Esq., V.S., London.*

HAVING read some observations in the March Number of THE VETERINARIAN, relative to the practicability of evacuating encysted tumours, or bursæ mucosæ, which contain a superabundance of their natural secretion, I am induced to relate a few successful cases which have occurred under my own immediate superintendence; although I confess that I should very reluctantly have recourse to the severe exercise which was used in order to set up adhesive inflammation.

The bursæ, in various parts, often become considerably enlarged from long-continued exertion, and without producing any functional derangement. Their progress is usually slow; and they are considered as an eye-sore, which may generally be relieved by a temporary suspension of labour, in conjunction with blisters over the parts affected. Occasionally, however, we meet with cases of a very acute nature occurring after a severe day's work, or through some sudden strain. They are accompanied by considerable pain and lameness, and the tumour becomes indurated from the presence of coagulable lymph occupying the sac that was formerly filled with a mucous secretion. An antiphlogistic plan of treatment in an early stage will sometimes be found serviceable; but if not successful, the firing-iron must ultimately be resorted to.

At other times we meet with bursæ enormously enlarged; for instance, those situated above the posterior part of the knee, where the flexor muscles become tendinous; also in the hind extremity above the hock, and near the stifle-joint. These generally assume a chronic form; they are soft and fluctuating, and may or may not occasion lameness, in proportion as they interfere with the action of the tendons which pass over them. Repeated counter-irritants, setons, firing, &c. are sometimes beneficial; but where there is no direct communication with the capsule of a joint, they may not only be punctured, but laid open freely, and their contents evacuated, without any untoward results occurring, while there will be the saving of considerable time and expense connected with the loss of the services of the animal. Such, at least, has been the result of my practice in these bursal enlargements. A recital of the following cases may, perhaps, not be uninteresting.

A grey mare, seven years old, the property of Lord Vernon, was the subject of a very large thoroughpin: it had existed some



time, and produced considerable lameness. It was punctured by means of a trochar, and several ounces of fluid escaped. A bandage was then applied around the hock. On the following day the bursa had resumed its former size. The trochar was re-introduced, and the sac again evacuated. Adhesive inflammation now followed; and from this time the sac became obliterated, the swelling diminished, and the lameness removed. Some slight degree of constitutional irritation supervened in this case only, which subsided by laxative medicine and discutient lotions.

A chestnut gelding, aged, the property of — Tegart, Esq., was lame from an enlarged bursa above the posterior part of the knee. An incision about one inch in length was made into it, and a bandage applied. The fluid continued to escape for a few days; and, no appearance of adhesion taking place, a weak solution of sulphate of zinc was injected, which had the desired effect. He worked sound for some years afterwards.

A grey gelding, belonging to W. Hamerton, Esq., underwent the same operation as the grey mare on both hocks, with uniform success, and worked for seven years afterwards.

A chestnut gelding, belonging to Lord Willoughby, had a wind-gall above the fetlock-joint. It was opened with a lancet, without any untoward result.

A bay cart gelding, the property of Messrs. Rickards, was in the habit of working in the traces. The caps of his hocks became frequently bruised with the set-stick, and a large quantity of fluid accumulated, which was evacuated by a longitudinal incision in each with successful results.

I could recite several other cases, but I hope these will be satisfactory; at the same time I am sure your readers will not infer that a degree of local inflammation of the surrounding parts did not take place after each operation.

A restricted regimen was observed in all the cases both previous and subsequent to the operations, with frequent applications of cold water.

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## DIAGNOSTIC SIGNS OF ABSCESS.

*By R. PRITCHARD, Esq., V.S., Wolverhampton.*

[Continued from p. 159.]

WHEN the cellular structure is attacked by inflammation, or any viscus in which this tissue is a constituent part, and entering abundantly into the composition thereof, more especially if the inflammation be rapid in its progress and intense in degree, with

much tension, heat, and sensitiveness, we may confidently decide that suppuration is about to take place. I consider a description of the symptoms of superficial abscesses here unnecessary, because ordinary observation is sufficient to detect them; I will, therefore, only observe that the swollen and tumefied condition of the part by which phlegmonous inflammation is characterized, is much modified after suppuration has taken place. The tumour is greatly diminished at its circumference, less diffused, and appears more and more concentrated, so that the centre of the surface becomes in a degree elevated, prominent, and softened. The periphery of the inflamed surface is in some measure restored to its original state, while the prominent part yields more and more to the purulent fluid beneath. When carefully examined, fluctuation more or less distinct is evinced, and, as the abscess advances to the surface, this latter sign is more manifest.

Of *deep-seated abscess* we are at all times afraid; and the signs by which it is to be detected are of the utmost importance to the practitioner. In domesticated animals, the subjects of our professional study, we are unaided by the voice to point out the pain and pulsatory sensation isochronous with the pulse, with every other verbal diagnostic accessible to the human surgeon. As Mr. Mayer most justly observes—"How do we know where and when they are formed? To what veterinary work should we direct the anxious inquirer?"

True it is, we lack much information on subjects of pathology with which the human practitioner is acquainted. The whole art of farriery has too long been confined to a pocket volume; but it is to be hoped that veterinary science will find, by and by, sufficient talent amongst its votaries for the production of literary works more allied to those of the other profession in worth and extent.

In these cases of deep-seated abscesses, the most exquisite tact for examination is required, in order to arrive at an accurate opinion. Upon the disordered function of the affected organ or part, and upon the nature of the constitutional disturbance, the diagnosis entirely rests.

To give the whole of the symptoms of the different kinds of visceral abscess, would occupy too much time and space; but there is one particular indication for our guidance;—the abscess which forms in deep-seated parts or viscera is of the consecutive kind, taking place subsequent to some previous malady in animals whose vital energies have been lowered by this disease, or disordered function of the digestive organs, or otherwise. Every possible circumstance connected with the history of the patient must be taken into consideration, and the slightest difference in the

brain, until such time that some particular and decisive cause, operating in union with the changes occurring in the sac, its size or collection, gives rise to disease of the cerebral substance by which it is surrounded.

Abscesses of the brain are occasionally accompanied by various other lesions of the cerebral substance, and then effusion, external or internal, of the surfaces, tumours, softening, hardening, inflammatory appearances of the membranes, or ulceration in the walls of the cyst, are common attendants: accumulations of pus in the brain, like purulent matter in other organs or parts, attempt to escape from the body. Occasionally they make their way to the surfaces of the organ, either internal or external, and sometimes they break into the ventricles. If they open upon the periphery of the brain, the intervening membranes and bone are sometimes carious previous to death, and I believe that the cribriform plate of the ethmoid bone has been destroyed, and the pus escaped externally through the nasal fossæ in the human subject. There may also be an evacuation by the ear, procured by destruction of the petrous portion of the temporal bone.

Pus found in the brain does not appear to differ from that formed in any other textures of the frame. It is occasionally found exceedingly foetid. The only difference that I am aware of is, that it varies in colour from a dirty yellow or greenish white to one altogether white.

Encysted collections of pus in the brain are evidently produced by inflammatory action, but of so slow a grade of intensity as to be analogous to the chronic form of abscess.

Those purulent infiltrations found in the large nervous masses, like that which is met with in the other viscera resulting from absorption of purulent matter into the circulation, are the product of morbid secretion, rather than of inflammatory action, and take place very rapidly. Collections of pus are most frequently observed in the hemispheres; but suppuration may occur in any part of the organ, and of course produce effects varying with the extent of accumulation and the situation of the purulent collection. Slow effusions of blood, the existence of tumours, or any other diseased production, produce similar effects.

*Symptoms.*—The symptoms of abscess in the brain are very similar to those of inflammation of the membranes and substance of the organ. I have before stated as an important pathological fact, that, previous to a considerable increase of the collection and duration of its existence from the circumstance of the slowness of the formation of the encysted abscess, there were no indications of disturbance in the functions of the cerebrum; but, when the collection was much increased and had continued long, the nervous



substance by which the cyst is environed becomes irritated and inflamed, and then symptoms are evinced of the existence of abscess or other serious lesion of the organ. Therefore it is upon the inflammation and irritation of the brain produced by the presence of the collection, and in proportion to their degree, that the manifestations of the lesion depend.

It is in the functional derangement of the brain that we are to look for the symptoms of abscess existing in that organ. These functions consist of intelligence, instinctive desires, volition, and sensation. In this series of manifestations the phenomena of the disease must be sought after; and, according to the intensity, seat, particular state, progress, and extent of the organic change, the symptoms will vary. There are, which these manifestations indicate, not the acute forms of cerebritis and meningitis, but the sub-acute or chronic state of these lesions, differing from the former in the less intensity of the symptoms and the slower progress of the disease. Cerebritis may be general or partial. Of the latter is the particular state indicating the existence of abscess. In the horse and other animals the early or first symptoms generally pass over unnoticed. The sensibility of the surface and the action of the muscles, while partially and not permanently affected, and also the moderate degree of disturbance of the instinctive, or perhaps, more correctly, intellectual faculties, are seldom observed. Paralysis consequent on pressure, and disorganization, obscure the spastic contractions attending the early inflammatory irritation.

The first symptoms which attract the attention of the owners of horses in these cases are generally vertigo, dulness and defective vision. The animal reels in his walk, stands with his legs wide apart, and appears heedless of what is passing around him. In some cases, at this period, both the respiration and the pulse are moderately increased, while in others they are tranquil, or the latter increased in force only. If the purulent collection approaches or extends to the periphery of the brain, and the membranes are involved in the consecutive irritation, there is a tendency to delirium either inoffensive, morose, or furious. About this period, should the disease be confined to one hemisphere, the opposite side of the body generally indicates the principal derangement, in the spastic contractions of the muscles, the partial paralysis of the limbs, and, as I have more than once observed, a difference in the size of the pupils. As the disease advances, the organs supplied with the ganglial nerves are rendered more torpid—the pulse is slow and oppressed—the breathing deep, and occasionally stertorous, and there is somnolency, lethargy, and coma. In other instances, there is more of furious delirium—the eyes are wild and staring, and the pupils dilated to blindness. If copious bleeding is practised at this period of



the case, no mitigation of the symptoms follows the depletion in the disease of cerebral abscess, as in cerebritis or meningitis. This and the want of intensity in the early symptoms are the most prominent features in the diagnostic distinctions between them; and, according to my experience, they are only to be confounded with other tumours of the brain.

The power of locomotion varies according as the functions of the brain are impeded or obstructed. There may be falling forward, or on one side, or a rotatory motion. When the cerebral hemispheres are destroyed as far down as the level of the floor of the lateral ventricles, movement in a forward direction is produced. If both the optic thalami are injured, the animal falls forward; if only one of them, he falls one side. Rotation or turning round is produced by destruction of one of the striated bodies. If on the left side, the animal rotates to the left, and to the right when the disease is situated on the right side. One remarkable circumstance connected with motivity is, that when the cerebellum is injured the movement is in a backward direction; therefore the precise locality of the lesion may be decided by keeping in mind the respective sources of the motor functions.

*Prognosis of Cerebral Abscess.*—It is very evident, from the nature of the structure composing the walls of the cranial cavity, that an escape of purulent fluid from an abscess of the brain by an outlet to the external surface of the body is exceedingly precarious and doubtful. It is improbable in all cases, and in all but barely possible. The cribriform plate of the ethmoid bone may ulcerate and yield to the course of pus in this direction, or some defined spot in the parietal, as is occasionally observed in the sturdied sheep; or destruction of the petrous portion of the temporal bone may take place, and give exit to the purulent matter, but the animal will very rarely survive these terminations. The removal of the collection by absorption cannot be expected, being the chronic form of abscess, and, in which kind, the termination by absorption is rarely accomplished in any part of the body; *consequently abscess of the brain is generally, if not invariably, fatal.*

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## A CASE OF A HORSE SWALLOWING SPONGE.

*By G. RICKWOOD, Esq., V.S., Bedford.*

ON the evening of the 14th of March 1839, I was called on to attend a horse the property of a gentleman in this neighbourhood. The animal having just returned from a journey, had, an hour pre-

vious to my seeing him, swallowed a large piece of moistened new sponge which lay in the stable. Not having any practical knowledge of the result of such an affair, I was induced, in some measure, to fall in with the prevailing opinion of the great improbability of such a substance being either expelled undigested, or capable of digestion. However, I gave him immediately an ounce of Barbadoes aloes, with a drachm of calomel. I also ordered him to be kept from both food and water during the night; for I reasoned that, from the great power of capillary attraction which the sponge possessed, it would probably absorb a sufficient quantity of the juices of the stomach to fill all its pores, and the water, by diluting the gastric juice, might lessen its solvent power.

On the following morning he seemed to be free from pain or fever, and I ordered a few carrots to be placed before him. These, however, he refused.

On the 16th he continued apparently easy and without any indication of pain, and I allowed him a small portion of wetted hay, but no water. The physic had not produced any effect, probably because I had interdicted the use of water. In the evening he began to be very uneasy, and was frequently pawing and looking round at his flanks. I repeated the medicine. In the course of the night his restlessness increased to a very alarming degree, and he was evidently suffering intensely. This, however, subsided before the morning.

On the 17th he seemed to be tolerably comfortable, and I allowed him about three pints of warm water. In the evening the physic began to produce the desired effect, and he voided a moderate portion of digested fæces, but somewhat harder than of its natural consistence.

18th and 19th.—His bowels gradually assumed their natural action, but there was not any purging, properly speaking, nor any thing to indicate that he had taken so much aloetic medicine. He was allowed small quantities of water and wetted bran.

On the 22d he remained free from pain, but, the bowels continuing somewhat costive, I gave a third dose of medicine, which, on the following day, mildly but sufficiently operated, and convinced me that no obstruction remained. The patient was therefore dismissed.

No portions of the sponge could be detected in any of the evacuated matter, but the whole of it must have been dissolved, or, in other words, completely digested. Believing it to be the general opinion that sponge is rarely or never digested, I have been induced to send you the particulars of this case. The horse, perhaps, is less liable than many other animals to be injured by swallowing such a substance, on account of the intestines having in him so great a share in the digestive process. In most other animals it is nearly completed in the stomach. I attribute our patient's

recovery to the time which was thus allowed for the perfect digestion of the sponge.

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[We thank Mr. Rickwood for this interesting case. We believe it to stand alone in the history of veterinary practice.—Y.]

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## CASES OF TETANUS IN THE HORSE, PUERPERAL FEVER IN CATTLE, AND REDWATER IN SHEEP.

By THOMAS DARBY, *Esq., Louth.*

I BEG leave to send you two cases of the successful treatment of tetanus in the horse.

On the 4th of February last, a valuable black draught-mare was brought to my yard, the property of Mr. George Ware, of Marsh-Chapel. She had inflammation of the eyes. On looking round her I recognized evident symptoms of tetanus in an early stage; and, on inquiry, was convinced that it arose from a stub by which she had been wounded in the near fore-foot three weeks before.

On my acquainting him with the state of the animal, he was at first, very unwilling to be at any expense in medical treatment, believing that locked jaw was always fatal. At length, however, he consented that I should undertake the case, but it was to be at his own stables, ten miles away. I blistered the spine and abdomen extensively, and advised him to abstract, as soon as he got home, at least eight quarts of blood; I likewise gave him the following medicine to be administered after the bleeding,—three drachms each of powdered opium and camphor to be suspended in a pint of warm water, by means of half an ounce of linseed meal.

5th.—I received a message from him, stating that the mare appeared “less feverish,” had dunged and staled freely, and could manage to suck up a very loose mash. I ordered the draught of the preceding day to be repeated.

6th.—The owner came to me. He said that the mare was much better, that she did not straddle nearly so much with her hind legs, could turn better, and did not hide her eyes so much. The blisters were ordered to be repeated, and medicine sent as before.

9th.—I received a message that the mare was comparatively well, except her back being sore from the blisters, and she was very stiff in her hind legs, and a good deal engorged in them. I sent three diuretics.

16th.—I heard that she was at work in the plough.

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On March 17th, 1839, I was sent for by Mr. Meredeth, of Tathwell, to examine a very fine blood-horse, that I had fired about three weeks before for curbs. He had received a violent blow above the orbit of the left eye, which had produced perfect amaurosis in the eye. On examining him, I found symptoms of tetanus that I could not mistake. I bled him until he grew very faint, blistered the spine and abdomen very extensively, and gave him an ounce of Cape aloes and four drachms of the extract of belladonna in a pint of warm water; and, with a great deal of difficulty, I administered an injection of warm water, containing in it two ounces of laudanum. I also inserted a large rowel in the chest.

18th.—There is very little difference in him. I cannot get him to swallow the medicine. He can, however, suck a very loose mash. I therefore gave him three drachms of the extract of belladonna in a mash, and he, being a gross feeder, took it. The whole of the time that he remained under treatment, we were enabled to manage him in this way with the belladonna. The pulse had sunk from 64 to 50.

20th.—He was very costive, but we could not get any purgative medicine down him. The belladonna, however, he still continued to take. We administered three or four injections daily of warm salt and water, and this continued to keep his bowels tolerably open.

30th.—He has been constantly and rapidly improving. He has taken two drachms of the extract of belladonna daily; and his bowels have been kept open by the injections of salt and water. He being so much better, I now discontinued my visits to him; but I saw him a few days ago galloping up and down the Crew Yard. He is a noble and powerful animal, and well worth saving.

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I have had five cases of puerperal fever in cows, which have all done well from the liberal use of Epsom salts, croton seeds, and diffusible stimulants.

I have attended several flocks of sheep—hogs—that were dying fast on turnips. On opening them after death, I always found a considerable effusion of bloody water in the cavity of the belly. The symptoms usually were, a prominent staring eye, giddiness, an inclination to carry the head on one side, and obstinate costiveness. They too frequently died in about twenty-four hours after the first attack. I removed them all from their turnips for three or four days, and put them on grass, stubble, or seeds, where the layer was dry, and administered to every one a draught containing Epsom salts, tartarized antimony, gentian, and ginger. All that have undergone this treatment have escaped. On the 5th of the present month, I drenched four hundred at Mr. Frid-



lington's, near Elkington; and the owner has been to-day with me, and informed me, that, from the shepherd's account, they appeared to be all doing well.

The present is a most excellent lambing season in our neighbourhood, both as it regards the safety of the ewes and the number of lambs.

## REMARKS ON THE DISCUSSION ABOUT DRENCHES.

*By W. C. SPOONER, Esq., V.S., Southampton.*

ALTHOUGH it is by no means a pleasing office to interfere between two combatants in their literary affrays, yet, perhaps, a few remarks on this subject may not be thrown away, and particularly so if taken by the opposing parties in the same spirit with which they are offered. Now I take it, that, if any individual offers his opinions to his professional brethren on any branch of practice or science, such opinions, more particularly if they contain any novel views, ought to be received at least with respect; we certainly should concede to the writer, even if we consider him wrong, the desire to benefit those he addresses.

If these observations are just, it most imperatively behoves any individual who may choose to enter the lists in opposition to the first writer to use every courtesy towards his opponent, and by all means to avoid mistating his remarks. His object ought not to be to show up his opponent to ridicule or scorn, but to endeavour to convince him that he is in error; and a knowledge of human nature will teach him that this can be best accomplished by mild and gentlemanly arguments.

“Men should be taught as though you taught them not,  
And things unknown propos'd as things forgot.”

These considerations should particularly be borne in mind, because on the temper of the first reply depends the character of the discussion that may succeed. He who gives the first blow, has no right to complain if he receives still harder ones in return.

Now, for my own part, I read Professor Stewart's first letter to a Student, headed, “Beware of Drenches,” with considerable pleasure. I did so, because I agreed with him in much, though not all, of what he said on the subject; and I felt disposed to concede to him the merit of being the first to put students and others on their guard as to the danger attending, and the necessary caution to be observed in, the administration of draughts. On this subject I think authors and lecturers have been culpably negligent. All, I think, must acknowledge that Mr. Stewart's object must have

been praiseworthy, and his hints, to a certain extent, judicious; and if so, how much better would it have been for Mr. Markham to have made what admissions he could, and to have fairly disputed that with which he could not agree? Instead of which, he begins by finding fault; then mistates, and, by a side-wind, endeavours to convict Mr. Stewart of gross ignorance: and thus hostilities commence, neither party afterwards appearing disposed to give any quarter.

The mixing up of such personal feeling and rancour in any discussion of this sort is, I take it, a serious injury to the cause of science. It savours too much of the spirit of those dark days, when Galileo was imprisoned for teaching the motion of the earth, and Harvey was scoffed at and persecuted for demonstrating the circulation of the blood.

Mr. Stewart says, "a bottle is better than a horn for the administration of draughts." I think so too, because from the smaller opening of the bottle there is less danger of the medicine being wasted, and it is an object of great importance, where strong medicine is required, that the exact dose should be given, neither less nor more. For the administration of gruel, when it is of no great consequence if a little is wasted, a horn, I take it, is more convenient. Now, though Mr. Stewart advises a bottle, surely he does not wish to prevent Mr. Markham or Mr. Anybody-else from having their bottle made from whatever material he thinks best, for he does not say a *glass* bottle. For my own part, I make use of a copper vessel, holding about a pint and a half, composed of two parts, screwed together, the upper part being bent so as to be more easily insinuated into the mouth. From the other part of Mr. Markham's critique any one would suppose, if he had not read Mr. Stewart's first letter, that he had stated that a horse was not dangerously ill unless he would lie down. Now this is very absurd. Mr. Stewart's observations imply nothing of the sort, and therefore Mr. Markham's remarks on this head are worse than useless, inasmuch as they impute the grossest ignorance on the part of Mr. Stewart; and thus, though the language is not particularly offensive in itself, yet it contains the highest provocation, and Mr. Markham could scarcely have expected from Mr. Stewart a very courteous rejoinder.

And yet, though I admit that the provocation was great, I can by no means admire the spirit of Mr. Stewart's reply. He seems to wish, if I may so say, to annihilate Mr. Markham altogether. If he had been satisfied with defending himself in a more moderate way, he would not have been less esteemed by the profession.

Mr. Stewart, in this his third paper, submits six points to the consideration of practitioners:—

With the two first I agree, viz. "that draughts, particularly when pungent or disagreeable, are dangerous, and that by no care can the danger be altogether avoided." And not only do I agree with Mr. Stewart, but I think much credit is due to him for calling the attention of students and practitioners to this matter. I must add my testimony to the danger attending the administration of pungent draughts. I have known bronchitis and chronic cough produced, and, still more frequently, the tongue and back of the mouth excoriated and discoloured to a sad extent. This circumstance, indeed, has for a long time past induced me to abstain from the administration of either the oil of turpentine or spirits of harts-horn for cases of colic, and to rely on medicines less dangerous, though much more expensive and even more efficacious.

The excoriation of the mouth arises principally from the obstinacy of some horses in refusing to swallow the medicine, in consequence of which the pungent portions of the medicine becomes separated, in a measure, from the vehicle in which they may be administered. I do think that this circumstance, though experienced by many, has not been pointed out before ; but it verifies the saying, that though one man may lead a horse to the pond, fifty can't make him drink.

With Mr. Stewart's third point—"that no draught should be given unless the horse is in danger of dying without it," I cannot agree. There are many cases in which draughts may facilitate recovery, though death may not be threatened ; and in such cases, I take it, the practitioner is fully justified in giving them the preference, and, in this, encountering whatever risk there may be. At the same time, I agree with Mr. Stewart that draughts should not be given when balls will suffice. It should, however, be borne in mind that the chief danger is in the administration of pungent draughts for colic, and for this disease draughts are imperatively called for. With other drenches the danger is comparatively slight. In the treatment of influenza some practitioners advise the administration of oily purgatives ; spirit of nitrous ether, too, is a favourite medicine with many. Now I take it there is but little danger attending the administration of these medicines, if common care is used, and I would always incur this danger when I considered such medicines desirable.

I have no objection to Mr. Stewart's fourth point, nor to the sixth ; but I have to the fifth, for the reasons before stated.

I cannot by any means coincide with Mr. Wardle in his advice to give a draught without any assistance ; it is trusting too much to the horse's good-nature, for he has only to shake his head, or lower it, and half the draught may be wasted. I do not doubt that in many cases it may be effectually accomplished, particularly with



thoroughbred horses and ponies; but as it is an object of great importance that the whole of the draught should be given (particularly in spasmodic complaints), I should in all cases employ those means likely to prove most effectual, and these have been the aid of one assistant to raise the head, and, if the animal was obstinate and coarse-headed, another to keep the head steady. If the horse is light and well-bred, the head can be readily kept up with the hand; but if the contrary, I have found a ready means of doing it by throwing the halter attached to the mouth-strap over a beam or a roller affixed to the ceiling or rafters, by which means the head can be lowered to what degree we please. I would deprecate, with Mr. Wardle, the employment of unnecessary violence. Having written much more than I intended on the subject, I must now leave it; recommending, however, to the parties chiefly concerned a little more courtesy and good temper in their future discussions, by which means I have no doubt the good intentions of both will be better facilitated, and the cause of science and humanity more effectually promoted.

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## ON HEPATITIS IN THE HORSE.

*By* SAMUEL BROWN, *Esq.*, *V.S.*, *Melton Mowbray.*

IN a former communication which appeared in your valuable Journal on Diarrhœa in Cattle, I traced one of the exciting causes of that disease to a morbid action of the liver. In the present essay it is my intention to detail more fully the symptoms and treatment of hepatitis, not only in neat cattle, but also in the horse. One acknowledged function of the liver is the secretion of a natural purgative for the bowels from venous blood. From this we may fairly conclude, that any deviation from healthy action must necessarily cause a corresponding effect in the expulsion of the excrementitious part of the food;—hence diarrhœa and obstinate constipation.

Although Hepatitis is obscurely marked in the horse, experience has convinced me—but not without some professional blunders—that it is a disease of more frequent occurrence than was formerly supposed: and I imagine that, at the present day, there are but few veterinarians who have not recognized it both in the acute and chronic forms. Hunters that are kept in the stable during the summer months are frequently attacked by this disease, which probably may arise from their being too liberally fed, and a want of sufficient exercise. Its progress is sometimes insidious, as the horse will be a little off his feed for several days without shewing any other indisposition. As the disease progresses it becomes



better marked. The bowels are constipated—the *faeces* buttony, voided in small quantities, and covered with vitiated bile which varies in shades of colour from nearly black to that of a yellowish brown—the animal frequently lies quietly down, and turns his nose to his side—the membranous lining of the lips is tinged with yellow—the mouth is clammy, and the tongue, probably, more furred than it is in any other disease. In different cases the pulse varies much in frequency, but there is usually a peculiarity about it—it is soft and vacillating. Occasionally the animal has a stiffened gait and a staggering of the hind extremities. Sometimes diarrhoea supervenes, and the alvine excretions are extremely fetid, varying much in shades of colour and degrees of fluidity—sometimes resembling light clayey-coloured water, and at other times having the appearance of an addled egg.

In this stage the disease becomes alarming, as the appetite is gone—the pulse frequent and indistinct—the Schneiderian membrane occasionally of a purple hue—and the breath fetid; in short, it assumes a typhoid character. Cases sometimes occur in which the disease shews itself suddenly, and might be mistaken for some chest affection, as the respiration is frequent and short, and accompanied by a troublesome cough. Here much depends upon professional tact as to the indications derived from the pulse, the characteristic tinge of the membranous lining of the lips being scarcely perceptible in an early stage of the complaint: it soon, however, becomes apparent enough.

If we suppose that these symptoms are the effect of a derangement of function in the liver, and which may probably render the blood too impure for the due performance of the functions of animal life, our first indication of treatment is to restore this viscus to a healthy state and action; and in order to accomplish this, calomel is, in my opinion, the most efficient medicinal agent. But it is a question of considerable importance, whether it is most effective when administered in a full dose and evacuated by a cathartic, or given in small ones which may be retained in the system by being combined with opium. So far as I have been enabled to observe, I am of opinion that the latter mode is decidedly preferable, because the disease is generally accompanied with too much loss of appetite, and intestinal irritation and debility, to admit of large doses either of drastic or nauseating medicines.

As regards bleeding, much depends upon our early attendance and the nature of the symptoms. If the respiration is disturbed and the pulse ranging high, the abstraction of blood is in all probability beneficial: but, if the horse should have been ill for two or three days, and the pulse is slow and feeble, the chance of the animal's recovery is much greater when venesection is omitted.

With respect to the treatment, there can be no doubt that it requires considerable modification in this as in most other organic diseases, but the following mode is generally successful :—In those cases in which the horse is only off his feed, with little apparent constitutional derangement, calomel and opium are given conjointly; varying from two-thirds of the former and one of the latter, to equal parts of each, and which are formed into a ball with some aromatics, and given daily until the fæces are voided of their natural colour and consistence. In other cases in which considerable abdominal pain is shewn, the first indication is to allay the irritation of the mucous coat of the bowels; and, for this purpose, an anodyne laxative mixture is generally effectual. This mixture is best made by shaking together a watery solution of an alkali, linseed oil, and a small quantity of the tincture of opium. By adding a few drops of the croton oil this is converted into an efficient cathartic. In most cases, however, it is better to omit the latter, because calomel is necessarily given in an early stage of the disease, and, if purging should commence, we might probably attribute it to the effect of the medicine, while, in reality, it is too often that of a morbid biliary secretion.

During the progress of the disease the patient loses flesh fast; and when the appetite has returned, and, apparently, the digestive functions are naturally performed, he is, to a greater or less degree, in a state of debility, with a slow and intermittent pulse, which frequently continues for some time. In this stage tonics and occasionally stimulants are necessary, and vegetable bitters combined with small doses of the nitrate of potash and emetic tartar; or, as a stimulant, the carbonate of ammonia answers the purpose. Should diarrhœa supervene, it is generally accompanied by some degree of thirst, which may be considered beneficial, as it induces the animal to drink freely of thick mucilaginous fluids, which support the system and sheath the mucous surface of the alimentary canal.

Although absorbents and astringents may retard the expulsion of the fæces, in my humble opinion they are not of much service, as the animal too often sinks under the disease if calomel is not administered. It is given in small doses combined with an equal quantity of powdered opium, and I have sometimes fancied that the compound kino powder is a useful adjunct. If the disease should assume a typhoid character, every possible attention should be paid to cleanliness. I have thought that the vapour arising from the chloride of lime is of service here, and which is easily procured by pouring boiling water upon the powder and placing it in the same box with the animal. The hydrochloric acid forms a ready combination of tonic and antiseptic influence, and is given in small doses once or twice a-day, diluted with the infusion of quassia and

barley-water. If repeated trials of a medicine which has been accompanied with successful results should be any criterion by which we can judge of its effects, I feel assured that this acid is both a tonic and an antiseptic. It corrects the fetid mouth; and although the horse for a week or ten days previously had scarcely tasted solid food, it is not an uncommon occurrence to see the sensation of hunger return in a few minutes after the administration of the acid.

[To be continued on Cattle.]

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## ON THE FUTURE EDUCATION OF THE VETERINARY SURGEON.

*By E. A. FRIEND, Esq., Walsall.*

IN the dawning of a new era, which is even now peeping out from the edge of our professional horizon, it becomes every member of that profession to endeavour, as much as in him lies, to remove those obstructions that might prevent its breaking forth into the blaze of a glorious day. I have thought for some time that veterinary surgeons are justly liable to the charge of supineness in not taking sufficient advantage of late and present circumstances. I allude now particularly to the avowed intention of the English Agricultural Association to interest itself in the future education of aspirants to veterinary honours. I have waited a long time for some influential member of the profession to come forward with his views on this important subject; and as no one has done so, I hope I may be pardoned for offering a few remarks to your notice.

We have no right to expect that advantages such as the first Agricultural Association in the world might be capable of rendering to us should be thrust upon us *unwished* or *unasked for*. We are the party who have felt the misery and deprivations of a defective professional education; and it is our duty to seize every opportunity afforded us, of transmitting to posterity a better and more efficient mode of instruction. It certainly strikes me, that they who have experienced the evil ought to interest themselves the most in seeking the remedy; and I earnestly hope, that the profession will, as with one voice, let its wants, with reference to instruction, be known, that whatever the Association may finally determine upon, they may not, at least, be in ignorance of what we ourselves would consider the most efficient assistance which we could receive at their hands.

In detailing the hopes which I had indulged in from the formation of this society, identified as it must be with the best interests of our



patients generally, I must necessarily explain, in some measure, the views I entertain of the proper education of a veterinary surgeon. I will take it for granted, that we are now in a position to acquire, with proper personal application, all that is necessary with regard to one of our patients at least—the horse. We are, at any rate, progressing rapidly in this department. The complete establishment of *THE VETERINARIAN*, a work which has rendered and is still rendering the most essential services to the profession by its diffusion of scientific knowledge, and the good feeling which it has been the means of promoting or encouraging amongst its members, evinced by the ready and kind communication of important facts in its pages every month—the establishment of the Veterinary Medical Association, founded and carried on as it is on the broad basis of equal rights and mutual assistance; and the Old Establishment at St. Pancras, with its professors and teachers, furnish, altogether, ample means to a previously well educated young man to acquire sufficient information in this branch of our art to enable him to practise with credit to himself and advantage to his neighbours. A few evils still undoubtedly exist; but it might be unwise seriously to notice them on the present occasion, as I do not fear they will be corrected by those in authority, or eventually correct themselves.

But as it is an admitted fact, that there are as yet no legitimate and sufficient means offered to veterinary students of acquiring that knowledge which will fit them for practitioners amongst our other patients, particularly the more important ones, cattle and sheep; and as the Society before referred to has, I believe, very kindly made some advances towards rendering us assistance, I earnestly hope it will be dealt out with no niggardly hand, but be really such as will reflect credit on themselves, while they are conferring a valuable boon on their country by sending forth men conversant with the history, the habits, the wants, the diseases of their patients;—men who would be qualified not only to attend them under disease, but who might become the friends and advisers of their patrons in the breeding, rearing, and general management of their stock.

I had hoped, then, that something of the following kind might be effected:—Suppose that a farm were taken, large enough to maintain a few of every distinct breed of sheep and cattle. Independent of the advantages which might accrue to the veterinary student, it strikes me that an experimental breeding-farm, conducted on the best principles, might be productive of great national benefit; and I see no fair reason to suppose that it ought to be a very losing concern. Suppose, then, that in this establishment accommodation was provided for veterinary students, and



two teachers placed at the head of it,—an anatomical and a pathological professor, or a third added, if necessary, to take the entire management of the breeding, rearing, and feeding department,—how beautifully and effectually might the teacher of anatomy and physiology enforce his opinions with the dead subject before him, and living models at hand to illustrate his peculiar views, or the adaptations of different animals to breed, to milk, or to fatten, &c.!—what an enlarged field would he have before him to prove the truth of his doctrines, and to put them in a light that could scarcely be mistaken or controverted: substituting living and tangible proofs for what might possibly be otherwise the distemperature of an enthusiastic imagination.

Then what a scope for the pathological professor, supposing (that in addition to the cases which would most probably occur on the farm itself) a fund were set apart for the purchasing of diseased animals of every kind, or if the establishment were considered as a kind of hospital to which diseased animals might be sent from every neighbouring district. How might he seize on every fresh case as the subject of his lecture, and what a fund of valuable information might be obtained from a faithful and careful record of different diseases, and a narration of the symptoms, the treatment, and the effect produced under every possible circumstance. How valuable a chance, if he were allowed in all cases to follow the medical treatment to the utmost extent on the patients who were, *bonâ fide*, the property of the establishment; or to kill them under any stage of the disease, and ascertain by direct proof the difference and the extent of the lesions which the several stages would present!

Then, under such circumstances, look at the advantages to the student. We will suppose that if it were incumbent upon him to spend two years at least at this establishment before he could be allowed to enter the Veterinary College, or, at any rate, that he must spend this time there before he could obtain a diploma from the old Veterinary College, and that a diploma was as necessary from the one as the other—the chances are, that in one branch alone—parturition,—he would see more cases during this time than in ten years of actual practice, after the present system of tuition.

What a lamentable fact it is, that scores of veterinary surgeons have been sent out into the world whose first case of this kind they ever saw was one of great difficulty, and where they were expected to succeed in the delivery of the animal after all ordinary assistance had failed.

It should also be a part of the duty of the student—and strictly enforced—to keep an account of every remarkable case of disease, and at least of two or three of every kind, whether particularly remarkable or not—considering them under all their different stages,

with notes of the treatment and the effects produced—the abnormal appearances on dissection—the opinions which were held during life—the correctness or incorrectness of these opinions displayed after death—the distinguishing as accurately as possible the cause from the effect—the reasons with which their own judgment would supply them, conjoined to those of their teacher, for tracing the plain and palpable and all-important connexion between cause and effect, in the lesions under review—the previous history of the case, so far as it could be learned—the soil, the climate, the feeding, the general management, &c.

Again, how interesting to ascertain, in as great a number of cases as possible, the exact periods of gestation in different animals—the probable causes of accelerated or retarded parturition—the real difference of structure immediately preceding it—the precise appearances of the mammæ, vulva, &c., which indicate the near approach to this state; and other circumstances which it would be the duty of the teacher to point out to them.

Once more—if, as already supposed, a talented man were placed at the head of this establishment, as breeding or agricultural manager, or both offices combined under one person, what immense advantage might not the student derive from his tuition in the breeding, rearing, feeding, and general management of the different kinds of animals under his care! What a complete and true history of the every-day life of these animals might be acquired! Their habits, their wants, and their susceptibilities would become as familiar to him as household words, and the least departure from health would be immediately detected.

A man who carried with him into practice a copious and faithful record of these things would always have something valid to fall back upon in every dilemma: and I have no hesitation in saying, that he would become a valuable addition to any country in which he might set himself down.

Your readers will please to accept this article as containing a few loose arguments, carelessly strung together, and not as a regular essay on veterinary tuition. They are hazarded with a view to ascertain, through the medium of *THE VETERINARIAN*, what the profession generally are anxious should be the nature of the education which the future student ought to receive, under a change of system likely, I believe, to occur.

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[We return Mr. Friend a thousand thanks for this letter. We have shared in his astonishment at the silence and supineness of veterinary practitioners. He has nobly led the way. Let those who have the interests of the profession at heart accept his challenge.—Y.]

## ON SUPPOSED UNPROFESSIONAL INTERFERENCE.

*By* SAMUEL BROWNE, *Esq.*, *Melton Mowbray.*


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“Reason’s comparing balance rules the whole.”

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My dear Sir,—I AM fully aware that the object of your Journal is not to form a medium through which we may gratify motives of private pique or personal resentment; and if it was not for cherishing the hope that a more courteous professional feeling will be established among us, I should certainly not occupy your space in order to complain of an uncereemonious interference on the part of Mr. Evans, of Grantham.

I freely admit the truth of the axiom, that “two heads are wiser than one;” but, at the same time, I contend that, if our employers wish to avail themselves of the skill of two veterinarians, those persons ought to be brought into contact with each other.

The patient was an aged cart-mare, and the case that of a punctured wound through the integument and panniculus carnosus covering the ribs. I was requested to attend to her as soon as possible after she had received the injury: but, in consequence of ascertaining that the wound was a slight one, and being much engaged, I sent a bottle of digestive liniment to dress the wound, and, knowing that Mr. Musson’s men were aware that it should be well fomented, I did not send any particular directions respecting that part of the treatment.

In the morning of the third day after the accident, I was informed that the mare was off her feed, and that her side was very much swollen. I attended, and found her in good condition; the wound possessed considerable vitality; but there was too much inflammatory action in the surrounding parts for the suppurative process to commence. I dressed the wound with digestive liniment, abstracted a small quantity of blood, and gave her some diuretic medicine, combined with a small portion of opium, and directed that the tumefaction should be fomented with thick woollen cloths, wrung out of warm water, until matter was formed in the wound; or, if that should not take place, it was to be continued till I saw her again, which would be on the second day from that time.

Mr. Musson resides at Coltersworth, but he also occupies a farm at Hose, at which place the mare was; and he having been informed at Croxton races, that I considered the mare in a dangerous state, took Mr. Evans from thence to see her. There was nothing

unusual or inconsistent in this; but what I more particularly complain of on the part of Mr. Evans is, that he should have thought proper to dress the wound a few hours after me, without taking the case under his own treatment. This appears somewhat strange, and you will much oblige me by allowing that Gentleman space in your valuable pages to say, whether his interference in dressing the wound was voluntary, and arose from a belief that the application which he used would excite the wound to a healthy suppuration, and mine would not, or that he was prevailed upon to interfere solely from Mr. Musson's entreaties.

You will also much oblige me by inserting the above in your next number, with my name, as I conceive that such unwarrantable and unprofessional conduct ought not to escape public notice.

My dear Sir,

Your's, ever faithfully,

SAM. BROWN.

Melton Mowbray, April 10th, 1839.

## THE VETERINARIAN, MAY 1, 1839.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

“*The JOURNAL of the ENGLISH AGRICULTURAL SOCIETY.* Vol. I, Part I, 1839. John Murray, London.”

MOST heartily do we congratulate the British farmer—with whom we are beginning to claim, and shall, ere long, effect an intimate and honourable alliance—on the appearance of the first part of “*The Journal of the English Agricultural Society.*” In less than a twelvemonth, more than sixty peers, and a hundred members of parliament, and nine hundred and fifty subscribers, have enrolled themselves under the banners of this society. Every political purpose has been unequivocally and honestly disavowed; and they have pledged themselves to the accomplishment of one simple but glorious object—the improvement of the husbandry of England. One motive by which they were swayed was, doubtless, the advancement of their own individual interest; but there were other feelings, and of a higher character, and one of the most influential of them was, “to be enabled to give more bread to their dependent workmen, and to strengthen the resources of their country.”

“The produce of the corn and grass lands of England and Wales,” says Mr. Pusey, who, with his characteristic zeal in a good cause, undertook the editing of this first part of the Journal,



“may be estimated at 108 millions sterling. Now, if by any improved process it may be possible to add, even in a small proportion, to the average acreable produce either of arable or pasture land, this increase, small as it may seem, may be, in fact, a very large addition to our national wealth. The average produce of wheat, for instance, is stated at 26 bushels per acre. If, by a better selection of seed, or better mode of tillage, we could raise this amount to 27 bushels only, a supposition by no means unlikely, we should, by this apparently small improvement, add to the nation’s annual income 475,000 quarters of wheat, worth, at 50s., about £1,200,000 yearly, and which would be equal to a capital of 24 millions sterling gained for ever to the country.”

A little while afterwards, another practical illustration is given of the important consequences of seemingly trifling improvements. “The produce of turnips, when cultivated in the *broad-cast* manner, varies from 5 to 15 tons an acre—the latter being reckoned a very good crop. In Northumberland and Berwickshire, a good crop of white globe-turnips, *drilled*, weighs from 25 to 30 tons; the yellow and the Ruta-Baga, or Swedish, a few tons less.”

Referring afterwards to an improved and increased system of drainage, another view is taken of this subject, and a very interesting one. “If a pound only were, in this way, laid out on each acre,—a very moderate supposition—there are 48 millions of cultivated acres in Great Britain and Ireland, and a demand for country labour, amounting to 48 millions sterling, would thus be created; a demand exceeding that which the railroad bills professed to create in the session before last, and far more advantageous in its effect on the labourers, inasmuch as the demand would be a gradual one, not severing them from their homes and their families.”

We are transcribing from the admirable Introductory Essay, by Mr. Pusey, on the “Present State of the Science of Agriculture in England.” We must be pardoned for extracting another quotation on a subject in which we are still more concerned. “The saving effected in the cost of production, through the early maturity of the new Leicester sheep, or of the cross between the new Leicester and the Cotswold, has been calculated, by a practical farmer in Gloucestershire, at nearly 20 per cent.; that is to say, it would have cost about one quarter of the outlay more to supply the present quantity of mutton consumed in this country under the old system than by the new. This may be taken as a moderate estimate so far as the new Leicester blood and its propensity to early fatness has hitherto extended. It may be worth the inquiry, how far the South-down race has been improved in this respect; or how far it may be capable of such improvement and of thus combining rapid maturity with its own superior hardihood.”

To the accomplishment of these grand and patriotic objects, separate from every other purpose, this Society is devoted. At the ensuing Meeting and Cattle-show of the Society at Oxford, on the 17th of July, in the present year, £1000 will be distributed in prizes connected with every species of agricultural improvement.

The second Essay in this Journal we shall quote at length, for it is truly worthy of its noble author. It is the first *acknowledged* literary contribution of Earl Spencer to the cause to which he has been so long and ardently devoted; but it will be the sacred and pleasing duty of some future annalist to tell how extensively this nobleman has been directly and indirectly connected with the onward progress of agricultural improvement.

*On the Selection of Male Animals in the Breeding of Cattle and Sheep*, by the Right Hon. Earl SPENCER, President of the Society. Read February 20th, 1839.

More from wishing to set an example to others, than from any hope that what I myself can suggest will be practically useful, I submit to the English Agricultural Society the results of my experience in an important part of that division of farming to which my own attention has been particularly applied,—I mean the breeding of stock. The part to which the following observations apply is the selection of male animals. A large proportion of farmers breed sheep, and several breed cattle. To all who breed either this subject is one of great importance.

The object of a certain number is to breed bulls or rams for the purpose of selling or letting them, but that of the majority is to breed oxen or wethers for the purpose of grazing. The first of these classes is very well aware of the importance of selecting good male animals, and profess to spare no trouble and to be very indifferent as to the expense which they incur in obtaining them: but with respect to those whose object it is only to breed oxen or wethers, I am afraid the case is generally very different, and they take very little trouble, and expend as little money as possible in procuring the male animals to which they put their females; that is, they consider as a matter of indifference that on which the profitable or unprofitable nature of their occupation mainly depends.

It is admitted by every one that the bodily and constitutional qualities of the offspring are usually similar to those of the parents, either combining in various proportions the qualities of both parents, or taking entirely after one. I should say, as respects cattle and sheep, that, in most cases, the qualities of the male parent predominate in the offspring. I have also observed that the worse bred the female is, the more will this be the case when she is put

to a well-bred male. This observation was first made, I believe, by the late Mr. Berry, in an essay for which he received a prize from the Highland Society. He accounted for it thus: a well-bred animal means one whose ancestors, for several successive generations, have all been good, that is, have all possessed the peculiarities in constitution and shape which it is the object of experienced graziers to obtain in their stock. The characteristic, therefore, of the family of such an animal will be such peculiarities: but the ancestors of a badly-bred animal will probably have varied in every possible way, and therefore there will be no distinguishing characteristic in its family. It is consequently most probable that the offspring produced from a cross between two animals so circumstanced will be more like the one in whose family there is a distinguishing characteristic, than the one in whose family no such characteristic exists. The common but, I believe, mistaken notion, that the offspring from the first cross is better than that from any subsequent one, probably arises from the improvement in the first instance being so much more apparent than, for the reason given above, it is likely to be in any one generation afterwards. Now it is known to all graziers that the attempt to fatten an animal who possesses no feeding propensities produces loss instead of profit. If the above observations are correct, the feeding propensities descend from the sire. It is quite just, therefore, to say that a breeder of cattle or sheep, who considers it a matter of indifference what sort of male animal he uses, does also consider it a matter of indifference whether he gains profit or incurs loss.

The prime object which any breeder of cattle or sheep must keep in view, whether he intends to breed bulls or rams, or whether his aim is merely to breed oxen or wethers, is that the stock which he breeds shall be healthy. The first thing, therefore, to be considered in the selection of a male animal are the indications by which it may be possible to form a judgment as to his constitution. In all animals a wide chest indicates strength of constitution, and there can be no doubt that this is the point of shape to which it is most material for any breeder to look in the selection either of a bull or a ram. In order to ascertain that the chest of these animals is wide, it is not sufficient to observe that they have wide bosoms, but the width which is perceived by looking at them in the front should be continued along the brisket, which ought to shew great fulness in the part which is just under the elbows: it is also necessary that they should be what is called thick through the heart. Another indication of a good constitution is, that a male animal should have a masculine appearance. With this view a certain degree of coarseness is by no means objectionable: but this coarseness should not be such as would be likely to shew itself in a castrated animal, be-



cause it thus might happen that the oxen or wethers produced from such a sire would be coarse also, which in them would be a fault. Another point to be attended to, not merely as an indication of a good constitution but as a merit in itself, is that an animal should exhibit great muscular power, or rather that his muscles should be large. This is an usual accompaniment of strength of constitution, but it also shews that there will be a good proportionate mixture of lean and fat in the meat produced from the animal, the muscles being that part which in meat is lean. A thick neck is in both bulls and rams a proof of the muscles being large, and there can hardly be a greater fault in the shape of a male animal, of either sort, than his having a thin neck. I am inclined to say, that in the new Leicester breed of sheep, which is the breed to which I am accustomed, a ram's neck cannot be too thick. Other indications of muscle are more difficult to observe in sheep than in cattle. In a bull there ought to be a full muscle on each side of the backbone, just behind the top of the shoulder-blades; he ought also to have the muscles on the outside of the thigh full, and extending down nearly to the hough. It will seldom happen that a bull having these indications will be found deficient in muscle. With respect to rams, my own observation does not enable me to point out any other indications of muscle except the thickness of the neck, which I have mentioned above: if other farmers are able to point out any, I would only say there is scarcely any thing to which they ought to pay greater attention.

As I am writing for the use of farmers, it is quite unnecessary for me to attempt to give a description of what is considered a well-shaped bull or ram; it is also obviously impossible to express in words what is meant by good handling. It is sufficient to say, therefore, that no male animal is fit to be used at all as a sire whose handling is not good, and that the more perfect his shape is the better. The above observations apply to breeding generally; for, whatever may be the sort or size of the animal intended to be produced, there is no doubt but that good health, propensity to fatten, and good shape, in all cases, ought to be aimed at. But there are not only different breeds, both of cattle and sheep, but experienced and very good farmers differ very much in opinion as to which peculiarities of shape and size are to be preferred, even among animals of the same breed. It is therefore very desirable, before any man commences to breed either cattle or sheep, that he should make up his mind as to the shape and qualities he wishes to obtain, and steadily pursue this object: if he does so, there is very little doubt but that he will succeed in having a herd of cattle or a flock of sheep possessing the characteristics which he at first intended they should possess; but if, on the other hand, he breeds



at one time with the view of obtaining animals possessing one sort of shape, and at another time with the view of obtaining animals possessing a different sort of shape, the probability is, that his stock will possess neither the one nor the other in any degree of perfection. Having made this decision, he should take care that the individual male animal which he uses shall possess the qualities which he requires. In addition to this, it is of great importance that these qualities should have been characteristic of the family from which the animal is descended; and if he is old enough to have been the sire of any number of offspring, it is of a great deal more importance still that they should possess them. Because all the perfections of shape and quality which the best judge may wish to find in a male animal are, after all, only indications of what the stock got by him will probably be: the seeing, therefore, what they really are is much more satisfactory.

There are few breeders, of cattle more especially, who breed upon so large a scale as to enable them to keep many male animals at the same time in use. A man, therefore, can usually only look at the general qualities of the females which he possesses, and observe what are the faults most prevalent among them: these he should be particularly careful to avoid in the male which he intends to use. It is sometimes said that a male animal ought to have no faults, and undoubtedly it would be very desirable that this should be the case; but, unfortunately, no such animal exists. All a man can do, therefore, is, to avoid putting a male and female together whose imperfections are the same, so as not to increase the fault already existing in his stock. If a man breeds upon a large scale, and uses several males at the same time, he can, of course, attend to this more effectually than if he uses only one. In this case, he should select and put together the males and females individually, so as to endeavour to correct any imperfections which either of them shew. Most breeders of sheep, indeed, do use more than one ram, and all who pretend to take any pains in improving their flock divide their ewes, so as to put them with the ram who will most probably effect this object. I need not say that those (some of whom, I am sorry to say, still exist) who turn two or three rams of different shapes and qualities into a field with all their ewes, without attempting to make any selection among them, have no right to expect to be successful breeders; and if they do expect it, will certainly be disappointed. I believe the general opinion of breeders is, that it is disadvantageous to endeavour to correct any fault in the shape of a female by putting a male to her who possesses, in extraordinary perfection, the merit in which she is deficient, but who in some other part of his shape is faulty. My experience leads me to say that this mode of endeavouring to cor-

rect a fault is frequently successful. It would be better that none of the females from which a man intends to breed should be faulty in shape to any considerable degree; but it almost always will happen that some animals possessing an excellent constitution, good blood, and a great propensity to fatten, and therefore such as the owner would very unwillingly cull, will fail decidedly in some part of their shape. I would say that, when this is the case, it is worth while to try the experiment of putting to them a male remarkable for his perfection in this failing part; and, in my opinion, such a male will be more likely to correct the fault, than one who shews no one part of his shape very superior to the rest. The late Mr. Cline, whose eminence as a surgeon is very well known, published a tract upon the breeding of domestic animals, which contained, as might be expected, most valuable information. His suggestions are such as ought to be very carefully attended to; but it is probable that his meaning has been mistaken in one recommendation which he gives, namely, that in which he is understood to say that it is always desirable that the male should be smaller than the female. When he makes this observation he is speaking of the crossing of different breeds, and probably only means that, in a cross between a large breed and a small one, the male should be taken from the small breed, and the female from the large one. It is hardly possible that he intended to say that in the same breed the male ought to be smaller than the female, because this is contrary to the practice of nature. In every description of land animal with which I am acquainted the males are of a larger size than the females. The attempt also to follow this advice would undoubtedly, in a few generations, so very much reduce the size both of males and females, as considerably to diminish their value. I can say, from my own experience, that some of the best-shaped animals which I have bred have been produced by following a contrary course. I prefer breeding from large females; but if I do breed from one which I think too small, I put to her the largest male of good shape that I possess. As one instance among several to prove that this course may be successful, the ox which I shewed in the fourth class, at the last Smithfield show, and which obtained the prize in that class, was by the largest bull I have, from a cow so small, that I culled her after she had bred that one calf. It must be admitted that the theoretical reasoning which Mr. Cline adduces in support of this recommendation appears to be very conclusive; but, even in the restricted sense in which I understand it, there is some doubt whether it is practically correct. The most successful cross between two different breeds of cattle of which I am aware, was the one between a Durham bull and a Galloway Scotch cow, made by Mr. Charles Colling. The produce from

this cross sold for enormous prices at his sale, and at the present day a majority of the best short-horned cattle are descended from it. My opinion, then, the result of my own practical experience, is, that if a man considers the female animals which he possesses to be smaller than he wishes, he may safely put them to a male of large size, provided he is well-bred, of good quality, and is well-shaped. But I am bound to add, that I know, in giving this opinion, I differ from the most skilful and successful breeders with whom I am acquainted.

It follows from the above observations, if they are correct, that the first and most indispensable object which all breeders must try to obtain, whatever may be the sort of animals they wish to have, whatever may be the shape or size they prefer, is that the male animal which they select shall possess a strong and healthy constitution. This is absolutely essential; but it is also most conducive to their success that they shall, after due consideration, make up their minds as to the qualities which they wish their stock to possess; that, having made this decision, they shall steadily pursue the object they have in view, and endeavour to select such males as shall be likely to get offspring possessing these qualities; that they shall carefully and candidly examine the females from which they intend to breed, observe the faults in shape or quality which prevail among them, and select males who shall possess corresponding perfections. That the safest mode of ascertaining what are likely hereafter to be the qualities of the produce from a male is, where there is the opportunity, to see what are the qualities of the offspring already produced from him; then, the next to this is, to observe what are the qualities of the family to which he belongs; and that, in the case of not having the opportunity of making use of either of these guides, they may assume that it is probable that the qualities of the individual himself, which in all cases ought to be attended to, will, if he is well-bred, descend to his offspring.

It has already been said that there are two classes among the farmers who breed cattle and sheep; the one, of those who breed bulls or rams—and the other, of those who breed oxen or wethers for the purpose of grazing only: the above observations are intended to apply to both. But much more attention ought to be paid by the first of these classes to the selection of the animals from which they breed than is absolutely necessary in the other. This is essential to their own interest, because a male animal very often shews faults in his shape, which, if he had been castrated, would not have appeared. It frequently, therefore, happens that the produce from a bull or a ram may prove excellent cattle or sheep for grazing purposes only, but may be totally unfit to be kept as the sires of future stock. Their duty, also, to those who



hire or buy from them imposes upon them the obligation to pay the strictest and most minute attention to the qualities of their male animals; more particularly they are bound not to offer to their customers any one, of the health of which they have any reason whatever to doubt—whether this doubt arises from any weakness of constitution which may have appeared in the individual himself, or whether it arises from their knowledge of the family from which he is descended. They are bound, also, not to keep as males any animals who are not perfectly well-bred. It does not follow from this, that a long pedigree is in all cases necessary, although it is generally desirable; but it sometimes happens that a female of whose pedigree the owner is ignorant, will have produced offspring which have all possessed extraordinary merit, and which have proved themselves good breeders also: a male descended from such a female, may be considered perfectly well-bred on her side; and will, very possibly, prove a better sire than many whose pedigree on paper is much longer.

In paying this minute attention to their occupation, the breeders of male animals have some advantages not possessed by others. They have generally the opportunity of knowing accurately what are the characteristics of the families of the animals from which they breed, an opportunity not possessed by those who breed only for grazing purposes. In order to make a proper use of this advantage, they ought to keep accurate pedigrees of their cattle and of their sheep, and as far as possible, when they put the males and females together, recollect what have been the respective qualities of the ancestors of each. They have also the opportunity, by using a male cautiously at an early age, of knowing by experiment whether the stock produced from him is good or bad, before they run the risk of injuring their stock materially by using him largely. This may be ascertained with sufficient accuracy, when the produce are very young; for an experienced breeder can judge with tolerable certainty what will be the shape of a calf or a lamb when it grows up by seeing it soon after it is born, and before it has begun to lay on fat. Nor is it necessary to see many of the produce for the purpose of deciding what its general characteristics will probably be. I admit that in saying this I am speaking more from my experience as a breeder of cattle than a breeder of sheep, but I believe the same observations will apply to both. It is certain, however, that seeing four or five calves from a bull ought to be a sufficient guide to the breeder as to whether he will be valuable as a sire or not. Unless there is a family likeness which generally pervades through the produce from a bull, although he may be valuable as the sire of oxen, it will not be safe to use him as the sire of bulls. The seeing, therefore, four or five calves



will prove to the breeder whether there is such a family likeness among them, and whether it exhibits itself in such qualities as indicate that, when they grow up, they will be valuable animals.

There is one failing to which all breeders are liable, but to which the breeder of male animals, from the greater interest attached to his occupation, is more peculiarly liable, and against which he ought most carefully to guard himself; this is, too great a partiality for animals bred by himself. In order to guard against this, he ought to occupy himself more in looking for faults than in discovering merits in his stock; he ought to listen to every criticism he hears made upon them, even by those whose judgment he does not hold in high estimation—not, of course, with the view of being satisfied at once that the criticism is correct, but with the view of satisfying himself, by accurate and candid examination, whether it is so or not; and he ought frequently to see the stock belonging to other breeders, and fairly compare its merits with those of his own.

I think it most probable that, in the foregoing observations, nothing will be found which will give new and useful information to practical farmers; but I have been induced to submit them to the English Agricultural Society, because I conceive that one of the great objects of that Society is the diffusion of knowledge connected with every branch of farming. The best way in which it can be enabled to effect this object, is by those of its members who have paid attention to any of the divisions of farming operations communicating to the Society the results of their practice and experience. It will then be for the Society to circulate, by any means in their power, such of these communications as it shall appear to them are likely to be useful to those engaged in the cultivation of the land. With this view I place this paper at their disposal.

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This Journal contains some valuable Essays on Ploughing and Draining, by Sir James Graham, Bart., the Hon. R. H. Clive, and C. S. Lefevre, Esq.; also on the Relative Values of several Varieties of Wheat, by Mr. Morton; and on Gas Water as a Manure, by Mr. Painter.

The simple and popular Essay on the Analyzation of Soils, by the Rev. Mr. Rham, will be read with much interest; but they belong to the farmer more than to the veterinary surgeon. Mr. Dudgeon, on the Progress of Agriculture in Scotland, will afford some useful matter.

## VETERINARY JURISPRUDENCE.

SHREWSBURY ASSIZES, *March 17.*ALLEN *v.* DENSTONE.

THIS was an action brought to recover the value of a horse which the defendant sold to the plaintiff in August last, under a warranty that he was all right except being a whistler. The warranty turning out to be false, the plaintiff sought, by the present action, to recover damages sufficient to cover the loss he had sustained.

It was soon found that he was diseased in his teeth, and that his food passed through him undigested. The horse, getting worse and worse, was turned out to grass, and, in November, taken to Shrewsbury and examined by two veterinary surgeons, and finally died in January last without having done any work since the day he was purchased.

Mr. John Townsend Bathe said, he was assistant to the plaintiff: on the 7th of August last, he was returning with Mr. Allen and a boy in a gig from Wrexham, and overtook Mr. Denstone, jun. between Wrexham and Overton, riding on the horse in question. Mr. Denstone said, he had been at Wrexham fair, trying to sell his horse, and asked Mr. Allen if he would buy him. Mr. Allen said No, I'm not in want of a horse of that sort; but what do you want for him?" Mr. Allen remarked that he looked very bad, and Mr. Denstone said, he had just had the influenza. Mr. Allen then asked if he warranted him sound, and Mr. Denstone said, Yes, except being a whistler. Mr. Allen got out of the gig, and got on the horse, which he rode into Overton on trial; Mr. Denstone took Mr. Allen's place in the gig. When Mr. Allen got off the horse at the inn at Overton, he said, He's a roarer, and Mr. Denstone replied, No, he's not; he's only a whistler. Ultimately, plaintiff and defendant went into a room. Witness met them coming out of the house, and Mr. Allen told him he had bought the horse, and, turning to Mr. Denstone, said, "Mark, he must be all right, except being a whistler," and Mr. Denstone said, he was. Mr. Allen also rode the horse on to Ellesmere. The next morning witness went into the stable, and observed that there were several quids under the horse's feet and in the manger; also that he scoured very much, and that his dung contained unmasticated oats. He also observed the same appearances the next day. On the 12th of August he examined his mouth, and found his teeth irregular, and his jaws

swollen, and on withdrawing his hand, it smelt very offensively. He saw him every day for three weeks, and during that time he still quidded and remained in the same state. Witness then turned him out to grass, and there the scouring continued, and he got daily worse. About five weeks before Christmas he took him to Shrewsbury to be examined by Messrs. Hickman and Crowe. He was blistered in the throat the day after he was purchased.

Mr. Salter, an attorney at Ellesmere, said, on the 13th of August, he went to Stanwardine, and saw the defendant and his son, and told the defendant that he came, at request of the plaintiff, to know why he refused to take the horse back again, which his son had sold for £9, and warranted to be all right, except being a whistler: defendant replied, that it was not likely his son would sell a horse for £9, and give a warranty with him, when, if he had been all right, he would have been worth £50 or £60, and refused to take the horse back, or return the money.

Samuel Smith, who was riding with Mr. Allen, for the purpose of taking the gig back to Chester, corroborated Mr. Bathe's evidence.

Six other witnesses also spoke to the quidding of the horse while he was at grass.

Mr. Hickman, a veterinary surgeon, carefully examined the horse on the 16th of November, and found his grinding teeth diseased, so that he could not use them with effect. Independent of whistling, he considered him an unsound horse. The disease of the teeth would prevent his masticating his food properly, which would cause him to quid, and oats would pass through him unbroken, and that would keep him in low condition. After death he examined the jaw and the viscera, every portion of which was very much diseased. From all the circumstances of the case, he considered that, besides whistling, disease did exist on the 17th of August, the day he was sold.

Cross-examined.—He did not quid from a sore throat; the quidding was to be attributed entirely to the state of his teeth. This horse's teeth did not want filing. They would not meet, and appeared to have been irregularly formed, and could not have been made to meet by filing. The horse was six years old, well bred, but he did not consider him a first-rate hunter.

Mr. Crowe, also a veterinary surgeon, examined the horse on the 16th of November. He considered him an unsound horse. His teeth and gums were diseased, and there was an offensive smell proceeding from ulceration of the mouth. He thought the disease must have existed in August last.

Mr. Sergeant Talfourd addressed the jury for the defendant, and said, the jury need not be told, that it was not usual for warranties to be given with £9 horses. They would remember, that

Mr. Denstone, sen. said to his son, he would have been crazy to have sold a horse with a warranty for £9, which, if he had been sound, would have been worth £60. The name of this horse was Bootjack; he was second in a steeple chase in December, 1837, and was much admired as a hunter. The plaintiff was told at the time of sale that the horse would not be warranted, and also that he was a roarer, and had had his teeth filed. He concluded with expressing his confidence, that they would consider that no warranty had been given.

Mr. Stephen Denstone, jun. said he lived with his father at Stanwardine Hall; his father bred the horse. In August last, he was rising seven years; about twelve months ago, he cut his cheek, and then his teeth were filed. Up to the time he was turned out last season, nothing else was the matter with him. He had hunted two seasons, and run in a steeple chase. He was turned out early in April, 1837, and thrived well at grass. Remembered David Morris making a communication to him on the 6th of August last. In consequence of what he said, witness got the horse in the stable, and found he was a roarer. His father was present, and ordered witness to sell him at the first fair, but told him not to warrant the horse. In consequence of those directions, he took him to Wrexham, but found there was no horse-fair there. Mr. Allen overtook him (as he was returning) near the Cock Bank, three miles from Overton, and asked what horse it was which witness was riding: witness replied, it's your old friend Bootjack, and asked if he would buy him. Mr. Allen said he did not want a horse at present, but, when witness said he would sell him cheap, he asked what witness would have for him; witness was not positive whether he replied, £16, £17, or £18. Mr. Allen asked what was the matter with him; witness said, He can't keep it a secret; he's a whistler. Mr. Allen said, Perhaps he's a bad roarer. Witness said he was not, and that Mr. Allen might ride him, and try. He then got on the horse, and cantered off, and witness got into the gig. Up to this time nothing was said about a warranty. At Overton, he and Mr. Allen went into a private room at the White Horse. Mr. Allen said he could not get more than £10 for the horse, and he ought to have £1 for buying it, and after some haggling, witness let him have it at £9, but nothing as yet had been said about a warranty: presently, however, Mr. Allen said he supposed he would give a warranty with him; witness said, Warranty! He could not think he would warrant a horse like that for £9. Mr. Allen asked if there was any thing else the matter with him besides being a roarer; witness replied he had not seen any thing of the horse since he went out to grass, but he went out sound: Mr. Allen said, very well, he would ride him to Ellesmere, and then give witness the money. Witness said he



had better go to the stable, and look the horse over again, and that Clay had filed his teeth about twelve months before. Mr. Allen galloped the horse sharply out of Overton. It was in fair condition. When Mr. Allen mounted to start to Ellesmere, witness told him he had better not ride him any further, as he had only come from grass that day; but Mr. Allen said he was in a hurry, and would ride him to Ellesmere. Mr. Allen paid him for the horse that evening, and said he came to Ellesmere in a very short time. Witness went to look at the horse in the stable, and found him with his two legs stretched out under the manger, and completely broken down. The horse never quidded while in his possession, and had no other defect but roaring. If sound, he would have been worth £100 as a hunter, and £60 to a dealer.

Cross-examined.—Riding at a good pace would not make him quid.

David Morris said he was groom to Mr. Denstone in August last, and looked after Bootjack. He had a bad cold when at grass, and afterwards began to whistle, and was brought up to be examined about a fortnight before he was sold. Never observed that he quidded, or that any thing ailed him but roaring and a cold in the throat. Remembered Mr. Allen overtaking them. Was by when he asked Mr. Denstone if he could warrant the horse, and he said he could not.

Cross-examined.—Before Mr. Allen got on the horse, Mr. Denstone said he was a whistler, but nothing else that he knew of.

Mr. T. Price said he saw the horse in Mr. Allen's stable on the 16th of August, with a very heavy blister under his jaws, which prevented him from swallowing. He chewed some hay, but could not swallow it. He considered him unsound then.

Mr. W. Sparling, jun. of Petton, knew the horse, and valued him, when at grass in the summer, at £60. He swallowed then, as well as the other horses.

The learned Judge said there were three questions for the jury to decide:—1st, Whether there was any warranty given at all; 2d, Whether it was binding on the father; and, 3d, Whether the horse answered to that warranty; in other words, Whether he was sound in all respects, except being a whistler, at the time of the sale, or not. The declaration stated, that the defendant warranted the horse in all respects, except being a whistler. Defendant said he never made such a warranty; but if he did, it was true that he was all right, except being a whistler. Two witnesses have sworn that the defendant's son did give a warranty in these words, and the defendant's son has positively sworn that no such warranty was given. It was unfortunately a characteristic of these cases, that there was much contradictory swearing, and

so it was here. It must therefore be left to the jury to decide which were most worthy of credit.

After a long consultation, the jury considered that there was no warranty given, and therefore found for the defendant.

### HEREFORD ASSIZES, *March 25.*

TURNER, Clerk, *v.* DANSEY.

This was an action brought by the plaintiff, a clergyman living at Kidderminster, to recover from the defendant, a gentleman residing at Easton, in Herefordshire, the difference between the price at which the plaintiff had purchased a horse of the defendant with an alleged warranty of soundness, and the price at which he was subsequently sold by auction after he was discovered to be unsound. The defendant had pleaded, first, that he gave no warranty; and, secondly, that the horse was sound at the time of sale. It was admitted by the defendant that the sum paid by the plaintiff for the horse was £45, that the horse was afterwards sold by auction at Worcester for £16, and that the expenses of and incident to the sale amounted to £4..7s..5d., leaving a net produce of £11..12s..6d. As a proof of the alleged warranty the following letter, written by the defendant to the plaintiff's brother, was put in and read:—

“Dear Turner,—Sometimes you are in want of a neat horse: I have now one to part with that would carry you in the field or on the road. As a hunter he is perfect, and an excellent roadster, and would make a clever buggy horse. The price is £45. The horse has been fired; but I can warrant him sound, and his age right. If I sell to a stranger, I should expect £50. Cresswell knows all about the prад.

“Your's, very truly,  
“D. R. DANSEY.”

The plaintiff's brother stated that, in consequence of receiving the above letter, he accompanied the plaintiff to the defendant's house, about the 31st March, 1837. Plaintiff and witness both rode the horse about a field in front of defendant's house, and on the turnpike road. On dismounting, witness observed that the horse pointed his off fore foot, and the plaintiff observed that he did not like that. Mr. Cresswell, the veterinary surgeon, was present, and said no horse could have better fore feet, but that he had been badly shod. The horse was then taken into the stable, and witness asked defendant how long it was since the horse had been fired. Defendant said, about two years, “I believe he is sound; do you think I would recommend an unsound horse to you or your brother?” Upon this the plaintiff bought the horse, and he and witness took him home. On his way he tripped very much, so

much, indeed, that plaintiff dismounted to see whether he had picked up a stone. When the horse got home, and was put into the stable, he continued to point the off fore foot, as if in pain.

On his cross-examination, witness stated, that the defendant offered to give the plaintiff a week's trial of the horse.

Other witnesses were called, who stated, that the horse, after he came into plaintiff's possession, pointed the off fore foot, and shewed symptoms of lameness.

Mr. Franklin, a veterinary surgeon, stated, that he saw the horse early in April; that he was then lame, and that there was nothing in his appearance which led him to believe that the lameness was attributable to any recent accident. This witness also stated, that in the month of June, the defendant said, that he warranted the horse sound; that he thought it very strange that the horse should be lame, though he certainly was lame at that time.

On the part of defendant, Mr. Cresswell, a veterinary surgeon, was called, who stated, that he was present at the time of the sale, and that no warranty was given. The horse was quite sound at that time. He had been lame before, and witness had fired him at defendant's request; after the firing he was perfectly sound, and he was so at the time of the sale. Defendant gave no warranty; but said, "on the word of a gentleman, I know nothing wrong about the horse, but you may take him and try him;" he added, "he has been fired on all four legs, as you may see; he may not be exactly up to your weight, but you may take him and try him."

Several other witnesses were called, who stated, they had observed the horse up to the time of the sale; that he was perfectly sound; that he did not point his off fore leg as stated by the plaintiff's witnesses, and that he hunted well.

Mr. Justice Patteson summed up the evidence; and the jury, after full twenty minutes' consideration, found for the defendant generally. His Lordship observed, "Gentlemen, there are two questions for you to find upon—First, whether the horse was warranted sound; and next, whether he was sound or unsound at the time of the purchase." The jury then reconsidered, and found for the defendant upon the first issue; namely, that there had been no warranty. The Judge then asked them what was their verdict upon the second issue, whether the horse was sound or unsound at the time of the sale. They again considered, and returned a verdict for the plaintiff upon that issue, finding that the horse was unsound at the time of the sale. The plaintiff will have to pay to the defendant the costs of the first issue, viz. as to the warranty; and the defendant will have to pay the plaintiff the costs of the other issue, namely, as to whether the horse was unsound at the time of the sale: so that they are both winners, and both losers.

## RHEUMATISM IN THE OX.

*By M. PEYRON, V.S., Sos.*

A FARMER at Bagaon, in the commune of Duranu, observed on the 3d of October, 1837, that one of his oxen had the dorso-lumbar portion of the spine swelled and tender; the right hock and the anterior right fetlock very much enlarged, and all these parts feeling exceedingly hot. A professed cow-doctor was sent for, who bled the animal and scarified the loins, which he covered with a mixture of blood and brandy. He then enveloped the animal with several thick cloths, and gave him a considerable quantity of warm gruel, which he drank with avidity. An abundant perspiration was excited, and which continued during the night, but was imprudently stopped by the cowleech, who threw open the doors of the stable and uncovered the horse, in order to examine the scarifications which he had made on the preceding day.

From that moment the disease made rapid progress until the 14th, when I was requested to visit the patient. I found him down, and his head resting on the litter—scarcely able to raise himself, and, when up, having great difficulty in supporting himself—rumination had entirely ceased—a violent fever evidently developed—the thirst insatiable—the food altogether loathed—the two hocks, the two knees, and the four fetlocks swelled, hot, and tender. Recognizing a case of sad rheumatic fever, I abstracted immediately eight pounds of blood, and ordered mucilaginous drinks, slightly nitrated, and emollient injections, and dry rubbing over the whole of the body, several times in the day, and the covering of the animal with sheep-skins, and sliced turnips alone to be allowed for food.

16th.—A slight amendment was visible. Another bleeding of seven pounds was had recourse to, and the other means of treatment continued.

20th.—The fever had nearly disappeared, but the joints were as tender as before. Rub them well with the ung. populeum:\* and give a decoction of poppy-heads and linseed twice in the day, adding three drachms of opium to each dose.

Under the influence of this treatment the animal rapidly improved, and, by the 28th, the tenderness of the joints had nearly disappeared, and the animal had ceased its continual moanings; but the limbs still remained very weak, and almost useless. The narcotic drinks were then omitted, and the former nitrated drinks resumed. I now deter-

\* This is a favourite anodyne liniment with our continental brethren, and is made of an extract of the buds of the black poplar, two parts, poppy, and belladonna, and black henbane and black nightshade leaves, of each one part, and twelve parts of lard.



mined to try the effect of counter-irritants, and, on the 3d of November, I inserted a seton, composed of hellebore-root, into the dewlap, and which soon produced very considerable local inflammation and swelling.

On the 6th, the enlargement of the knees and the four fetlocks had considerably diminished.

On the 10th, two new setons were placed, high up on the inside of the thighs, which soon caused a complete disappearance of the swellings of the knees and the fetlocks, leaving the hocks alone materially affected. A liniment, composed of two ounces of harts-horn and four of olive-oil was well applied to them morning and night, and twelve days afterwards the beast was dismissed.

*Journ. du Midi, Mai 1838.*

### MISCELLANEA.

#### LADY HESTER STANHOPE AND HER ARAB MARES.

THE prophecies of the East have announced for many ages the coming of a promised Messiah, who is to make his entrée into Jerusalem on a mare, born ready saddled.—Alphonse de Lamartine, in his pilgrimage to the Holy Land, thus describes his interview with Lady Hester Stanhope, and her singular opinion respecting the promised Messiah.

“Since destiny,” said she, “has sent you hither, and such an astonishing sympathy between our stars permits me to confide to you what I would conceal from the profane world, come, and you shall see with your own eyes a prodigy of nature, of which the destination is only known to me and my adepts. The prophecies had announced it for many ages, and you shall yourself be the judge, whether these prophecies are accomplished.” She opened a gate of the garden which led to a small inner court, where I perceived two magnificent Arab mares, of the present race, and of a rare perfection of form. “Approach,” said she to me, “and examine this bay mare; see if nature has not accomplished in her all that is written of the mare which is to carry the Messiah, and which is to be born ready saddled.”—I saw, in fact, on this fine animal one of those sports of nature sufficiently rare to serve as an incitement to vulgar credulity amongst a half barbarous people. The mare had, behind the shoulders, a cavity so large and deep, and imitating so completely a Turkish saddle, that we might say with truth she was foaled saddled, and, but for the want of stirrups, we might mount her as easily as if she carried an artificial saddle. This beautiful animal seemed accustomed to the admiration and respect which Lady Hester and the slaves evinced for it, and appears to feel the dignity of its future mission. No one has ever mounted it; and two Arab grooms watch over and never lose sight of it for an instant.

Another mare, quite white, and in my mind infinitely more beautiful, partakes with the mare of the Messiah of the respect and care of her Ladyship. No one had ever mounted it either. Lady Hester did not tell me; but she gave me to understand that, although the destiny of this latter was less holy, she had a mysterious and important one assigned her also; and I fancy that Lady H. Stanhope reserves the white one for herself, to mount on the day on which she makes her entry by the side of the Messiah into reconquered Jerusalem.

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#### RABIES IN SHEEP.

MR. BAYLEY, of Norton, near Hereford, has lost thirty-six lambing-ewes during the past week, from rabies, the sheep having been bitten by a rabid dog belonging to a neighbour. We have also been informed, that other sheep in the vicinity have died from the same calamitous cause. The sheep, when labouring under the disease, ran against and over and upon each other, and butted at those who approached them: they did not, however, attempt to bite; ultimately they fell head foremost, and died. The lambs of the flock, thus deprived of their natural sustenance, have been taken to be reared by Mr. Bayley's neighbours.

It has been erroneously stated, that Mr. Hickman, veterinary surgeon of this town, had operated, without success, upon the sheep that had been bitten; but the fact is, that Mr. H., satisfied that no good could arise from his so doing (a fortnight having elapsed from the time of their being bitten), merely operated upon two of them as an experiment, and at the request of Mr. Bayley; and of these two, from which the wounded parts were excised, and the cautery applied, one has since died. There were forty-six of Mr. Bayley's sheep bitten, and thirty-six are now dead.

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#### A LIST OF STUDENTS WHO HAVE PASSED THEIR EXAMINATION AT THE ROYAL VETERINARY COLLEGE, LONDON.

*March 27, 1839.*

Mr. G. Dale, Camberwell.  
 Mr. W. A. Wheatley, Reading.  
 Mr. James Carter, East Dereham.  
 Mr. G. Gillingham, Southwark.  
 Mr. H. Giblin, Balsham, Cambridgeshire.  
 Mr. J. H. Pearce, Penzance.

*April 3, 1839.*

Mr. C. S. Robinson, Orsett, Essex.  
 Mr. John Markham, Haywood, Staffordshire.  
 Mr. James Leggett, Hanwell, Middlesex.

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HIPPO-PATHOLOGY.

BRONCHITIS.

*By* WM. PERCIVALL, *Esq.*, M.R.C.S., 1st *Life Guards*.

DERIVATION.—From *βρόγχος* and *itis* : literally, inflammation of the throat. A disease so called from its seat being the bronchial tubes.

SYNONYMY.—In old works on farriery we find what we consider to have been this disorder called *morefoundering*, a word derived from the French appellations, *morfondement*, *morfondure*. By old writers on human medicine the disease has been described as *peripneumonia notha*, from its having been regarded as a sort of false inflammation of the lungs. Of late years it has got the name of *pulmonary catarrh*, which we have no less authority than the great Laennec's for preferring to the one—in compliance with custom—we have adopted above.

KINDS.—Bronchitis may exist either by itself or at the same time with another disease, in which latter case it is said to be *complicated*. In either case it may be *acute* or *chronic* : in the complicated form it may, in reference to the disease with which it co-exists, be either *primary* or *secondary*. Moreover, it may be *epidemic*.

The CAUSES of catarrh are the causes of bronchitis. The same membrane pervades the air-passages; and though from its situation within the lungs it is less exposed than within the head, still is it much under the influence of atmospheric changes and noxious inhalations. Independently, however, of these causes, there are others which in a peculiar degree operate upon the bronchial membrane. It is well known that this membrane, vast in its superficial extent, is closely allied in its function of secretion with the skin; and not with the skin alone, but with other mucous membranes of the body as well, particularly the one lining the alimentary canal. Cold or wet suddenly applied to the surface of the

body, particularly when heated, checking or suppressing perspiration, will be likely, on the principle of derivation, to throw an inflammation upon the bronchial membrane. A disordered state of the bowels may induce the same by sympathy. It is this known sympathy between the two membranes which deters us from giving aloes or any thing likely to irritate the bowels in bronchitis: being certain to be troubled with diarrhœa if we do. In addition to all this, bronchitis may be caused by other disease, and especially of the lungs or pleura. Moreover, it is a common accompaniment of epidemic catarrh. It every now and then supervenes upon strangles.

THE SYMPTOMS of an attack of acute bronchitis vary commonly in their nature, as well as intensity: in an ordinary case they are as follow:—the horse manifests dulness and defective (rarely complete loss of) appetite, accelerated pulse, skin and legs rather warm than cold, mouth warm and moist, Schneiderian membrane reddened. He coughs occasionally, hard and dry, and probably evinces some soreness about the throat. Next, his breathing becomes disturbed, short and quickened, but neither deeply nor painfully drawn; and occasionally accompanied with a sort of rattle or sighing noise. Either there is no flux whatever from the nose—in which form the disorder is called *dry catarrh*, rather a contradiction of terms—or else there is a scanty exudation of thin aqueous fluid, or of a glutinous yellow-looking thick matter. As soon as the inflammation begins to abate, the flux from the nose becomes augmented and turns of a mucous character. The pulse averages from 60 to 70, and is in general soft, and at the jaw not very perceptible; and yet it will bear repeated abstractions of blood before it will give way.

THE EPIDEMIC VARIETY of bronchitis is remarkable for the emission of copious fluxes from the nose, at one time turning yellow, at another green, and then again white. In this form the disorder is exceeding apt to assume the chronic type, and, after continuing for a length of time, to leave the animal reduced in flesh, and much debilitated.

CHRONIC BRONCHITIS now and then succeeds the acute; oftener however in its epidemic form than otherwise. At times it is of itself an idiopathic disease. In some old horses we meet with what is called “chronic cough”—a cough resembling a sound emitted from some deep cavern, occasionally accompanied with shortness of breath, and a discharge of sero-mucous matter from the nose, which is augmented in the act of coughing. Added to these symptoms, should a wheezing noise or *râle* be detected by the ear in the bronchial passages, we may safely set the case down as chronic bronchitis.



**PROGRESS.**—The malady in its acute form attains its height commonly about the fourth or fifth day, and after the sixth or seventh begins to decline, leaving the patient out of danger at the expiration of the tenth or twelfth. Should the case not go on favourably, however, about the fifth or seventh or ninth day we may look for dissolution. The signs of growing worse are, the respiration becoming oppressed, the pulse quicker and fainter ; the skin and extremities cold ; the mouth cold and clammy ; and the nostrils dry, lacking any moisture whatever.

**THE PATHOGNOMONIC SYMPTOMS** of bronchitis are nasal flux, with reddening of the Schneiderian membrane, cough, sore throat, dyspnœa. Auscultation will assist us in our diagnosis. In place of the natural, soft, and all but inaudible *murmur*, we shall perceive a distinct sound, a cooing sort of noise, arising from want of secretion within the tubes. When the secretion returns, and in augmented quantity, we may be able to detect the *râle* or rattle as it is called. These sounds will, of course, be present only in places where the disease is present ; and in one or both lungs, according as the case may happen to be.

**THE PROGNOSIS** is in general favourable. Bronchitis is dangerous only when the secretions clog or obstruct the tubes—or in its

**COMPLICATED FORMS**, when combined with other disease of the lung, with pleurisy, and especially with disorder of the mucous lining of the alimentary canal. In this latter case, in combination with diarrhœa, and when the inflammation is running high in the bronchial membrane, there is hardly a chance of saving the animal.

**PATHOLOGY.**—Veterinarians have continued too long in the error out of which even human surgeons have not many years emerged ; viz. the mistake of confounding bronchitis with peripneumony, and calling both by one name, *inflammation of the lungs*. It is true, the bronchial tubes constitute part of the lungs ; but then, inflammation seated in a mucous membrane must be regarded in a different light from inflammation in cellular tissue, such being the nature of the parenchymatous substance of the lungs, as well as dissimilar from any congested condition of the large pulmonary bloodvessels. The inflammatory attacks of the lungs to which young horses are so especially obnoxious, are, for the most part, cases of bronchitis ; and even of such as are peripneumony, bronchitis is a common precedent or accompaniment. In fact, there hardly exists any organic disease of lung in which bronchitis is not present, either in a primary or secondary form.

**THE TERMINATIONS** or consequences of bronchitis are such as to make us anxious to institute such treatment at its commencement as is most likely to lead to their prevention ; it being, of all others, the most fertile source of those organic changes which in particular

tend to shorten or impair the animal's wind. Roaring and thick wind commonly have their foundation laid in bronchitis. The bronchial membrane during the early stages of disease will be found in a state of congestion or turgescence; in the sequel it is very likely to become thickened in substance—*hypertrophied*, as it is called—in which condition the calibre of the bronchial tubes, the small ones in particular, will suffer considerable diminution, and consequently become but comparatively imperfect conductors of the respired air. In the larger tubes the lining membrane is furnished with follicles; and, in fact, has the true mucous character; but in the very small ones, as we approach the air-cells, it has been found to bear more similarity to a serous membrane, and on this account becomes still more disposed to take on the plastic or adhesive kind of inflammation, which not only gives rise to hypertrophy, but occasionally to solid effusion and agglutination of the sides of the tubes, obliterating their cavities, and converting them into mere chords, the same as happens when inflammation is set up in the interior of bloodvessels; and this may even go so far as to block up and annihilate the air-cells. The effect of this will be to shorten or “thicken” the wind, to compensate for which the animal will make additional efforts in respiration, and the result is likely to be *dilatation* of the vicinous tubes and air-cells. It would appear that this process of obstruction commonly commences in the smaller and makes way into the larger tubes, and from the circumstance of secretion having been found pent up in the air-cells while the tubes were in a state of obliteration, and assuming that sort of aspect which tubercles and vomicae are known to give the lungs, Mr. Stokes\* has ingeniously hinted that this “will go far to clear up the controversy about the nature and origin of tubercles.” In acute attacks of pure bronchitis in young and otherwise healthy horses, dissection has brought nothing to light but a reddened and turgescient or thickened state of the bronchial membrane, the tubes themselves being filled with a quantity of frothy mucus, appearing as if the animal had been actually choked by it, or, as Dr. Elliottson has pertinently expressed it, “drowned inwardly by mucus.”

**TREATMENT.**—Although blood-letting is the remedy upon which our chief reliance must be placed for the cure of bronchitis in its acute form, yet it is one I do not recommend the practice of in mild cases, nor even in others until the disease has quite set in. I do not find that its very early employment tends much to shorten or mitigate bronchitic affections; although it becomes highly serviceable as soon as the disorder begins to manifest any severity; and whether we bleed in the very beginning or not, we shall certainly be compelled

\* In his “Treatise on Diseases of the Chest.”

† Dr. Elliottson's Lectures.

to have recourse again to the phleam about the third or fourth day. The quantity of blood to be drawn must be such as will cause the pulse at the jaw to fail under the embrace of the fingers : about a gallon will ordinarily accomplish this in young horses : in horses five years old and upward, more may be required. In some low-conditioned subjects three quarts may suffice. Should the pulse and dyspnœa and fever not become palpably diminished by one blood-letting, a second may be employed after twenty hours' interval ; also a third, and even fourth, as the case may happen to be ; taking care, in the epidemic form of the disorder more particularly, that these evacuations be small, and cautiously practised after the fourth and fifth days have passed. The bowels must be kept soluble, but not by aloes. Indeed, I am afraid we possess no medicine mild and safe enough to accomplish this desirable end, and therefore we must effect our object by enema, and, fortunately, we can always succeed in this manner quite to our satisfaction.

The well-known sympathy existing between the membranes of the bronchial and alimentary tubes, and the consequent morbid irritability of the latter whenever the former is in a state of inflammation, is the reason for this positive prohibition of aloes ; a medicine drastic and irritative in a high degree to the mucous surface of the intestines, and one that has in numerous instances in this complaint brought on a diarrhœa, which has annoyed and debilitated the animal without in the least diminishing his bronchial disease, while at the same time it has prevented the practitioner from necessary abstractions of blood, and induced him to give medicines either for its mitigation or suppression, such as could not fail to do harm in another way. I feel persuaded that many horses have been lost after this manner, thus evincing that aloes, although a medicine capable of doing more good than any we possess, still is one with which we may, even in small doses, work an incalculable deal of harm.

To the question often asked—if one is not to give aloes, what ought one to give ? I answer, give any thing but aloes ; rather give nothing at all. Give either hellebore or digitalis in half-drachm doses, once or twice a day : I prefer the former, because it nauseates quickly, and because the latter is apt for some considerable time to take no apparent effect at all, and then all at once to come into dangerous operation. Or tartar emetic and nitre may be given.

As soon as our abstractions of blood have had the effect of lowering the power of the pulse, and abating the febrile excitement, the dyspnœa, and heat of mouth in particular, we may begin to think of counter-irritation : the practice of blistering and rowelling while inflammation is running high is quite futile and useless, for no sort



of effect will be produced : the very fact of blisters rising and rowels discharging being a proof of the decline or remission of inflammatory action. In cases at all urgent a blister should be applied to the breast ; that being a situation in which it will most readily take effect, even when no impression can be made upon the sides. Should it be deemed advisable to stimulate the sides as well, mustard embrocations will be found preferable to cantharides. A rowel may be inserted in the breast in any case wherein, from its slightness or subacute nature, and consequent tendency to the chronic form, it is not thought worth while to inflict the pain and temporary blemish of a blister, and wherein it is of consequence that counter-irritation should be kept up for some time.

Towards the close of the case, at the time that the disorder appears to have exhausted its inflammatory tendency, and manifests effects of loss of condition and debility, it may be proper to commence a course of tonic medicine, which it is highly advisable should have some diuretic ingredients in order to prevent or counteract any disposition to dropsical effusion that may be left behind. In such cases as this also great benefit may be expected from local derivatives, such as issues in the form of plugs, rowels, or setons.

In such cases as assume the chronic form, even though they be mild in their character, yet at the time that febrile excitement is present, a small blood-letting will often prove very serviceable. And from counter-irritation more is to be expected than when the disorder is acute. Should there be much flux from the nose, giving the disorder the character of nasal gleet, such medicines may be administered with a view of checking or suppressing it as will be found recommended in my description of this latter complaint.

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## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

### MASTICATION.

THE extension of the cheeks and the lips, by the depression of the lower jaw, enables the cavity of the mouth to be considerably enlarged. The aliment which is introduced into this cavity, and which the sphincter of the lips retains, undergoes certain changes, partly attributable to the masticatory organs, and partly to its mixture with the saliva. If it is soft, the pressure of the tongue crushes it against the arch of the palate, after which it is swallowed by the animal ; but if it is hard, dry, and cohesive, it



is formed into masses of a certain volume, the masticatory organs dividing it into particles more or less minute.

Comparative anatomy teaches us, that the conformation and the disposition of the masticatory organs present, in the various orders, families, and species of the mammalia, differences which have evident relation to the nature of the food, and the habits of each. Into the consideration of this, however, we shall not at present enter, but shall only observe, that in the dog and the cat the teeth are crowned with points more or less acute, or are decidedly trenchant, and that the temporo-maxillary articulation is so constructed that the movement of the lower jaw is confined to a simple up-and-down vertical action. Thus the aliment is divided, or, as it were, cut by the two branches of a pair of scissors, rather than crushed. In the horse and the ruminant, on the contrary, none of the molar teeth have a trenchant or pointed crown, but, are flattened and furrowed, and the disposition of the temporo-maxillary articulation permits to the lower jaw not only a vertical, but an horizontal action. Therefore these animals bruise and crush and grind their food while they are masticating it.

Whatever may be the structure and the disposition of the masticatory apparatus, the comminution of the food is always of the greatest importance, as connected with digestion.

1. It destroys, to a certain degree, the cohesion of the food, and its organic reticular organization, and reduces it to smaller masses, more proper and easy to be swallowed.

2. It renders them more penetrable by the saliva, which moistens and softens, and even dissolves some of their principal constituents.

3. It favours their dissolution by means of the gastric juice. The more they are attenuated by it, and converted into a pultaceous mass, the more readily are they penetrated by the gastric juice, and the more perfectly it exercises its solvent power upon them.

#### ACTION OF THE SALIVA.

During the act of mastication, the saliva mingles with the food. The secretion of this fluid is increased partly by the influence which the food exerts on the salivary glands, and partly by the motion of the masticatory organs.

1. The saliva acts mechanically on the food. It moistens it, and forms it into a viscid mass easily swallowed.

2. With the aid of the warmth of the mouth, it contributes to the dissolution of the food, as much by the great quantity of water which it contains, as by other solvent principles. Many simple aliments, as sugar, animal gelatine, and vegetable mucus, are

liquefied in the mouth by means of the water contained in the saliva. By means, also, of the carbonates and acetates and chlorurets of potassium and sodium which it contains, it softens the food, and even dissolves it to a slight degree. The experiments of Réaumur and Spallanzani on the ruminants prove this. The animals, whom they made to swallow food enclosed in tubes, digested it much more easily after it was moistened with saliva than with pure water. We dare not to decide whether the sulphocyanuret of potassium contributes to the softening of the food. Perhaps it assists in destroying its vital contractile property.

3. The saliva contributes also to the assimilation of the food, and communicates to it the property of becoming more easily animalized. This opinion is confirmed by the fact that herbivorous animals have much larger salivary glands than those who live on animal substances. The assimilating action of the saliva on the food probably consists in imparting to it its salivary matter, its osmazome, and, possibly, also, its albumen. This, however, is a problem which we cannot satisfactorily resolve, on account of the little knowledge that we have of the composition and properties of the salivary matter and the osmazome.

4. The saliva is the medium through which the aliments exercise their influence on the gustatory nerves, since the sensation of taste is only perceived when the aliment is to a certain degree moistened, or dissolved.

The food thus comminuted and impregnated with saliva in the cavity of the mouth passes into the stomach by means of the influence exercised upon it by the organs of deglutition.

#### THE ACCUMULATION OF FOOD IN THE STOMACH.

The stomach, which in an empty state is contracted upon itself by the power of its muscular tunic, submits to considerable changes in its form and structure as the food accumulates in it. Its parietes are distended by little and little, commencing from the cardiac orifice. In proportion as fresh masses arrive, the food that has previously descended is pushed towards the middle and pyloric portions of this viscus. The distention of the latter is favoured by its situation between the two laminæ of the peritoneum which form the epiploons—omentum. In proportion as its volume augments, these laminæ separate from each other, and apply themselves to the surface of the stomach, and the epiploons are thus contracted. The tunics placed over each other, and forming the walls of the stomach, are distended by the alimentary mass. The numerous and undulating rugæ which the internal or mucous membrane of the stomach offered in a state of vacuity are effaced.

The vascular layer, covered by a dense ramification of bloodvessels, thickens; and the muscular coat, composed of longitudinal, circular, and oblique fibres, is distended, in every sense of the term.

In proportion as the stomach fills, it dilates, and its axis undergoes a kind of torsion. Its horizontal position in the dog and the horse not permitting it to dilate superiorly, on account of the resistance opposed to it by the vertebral column, it takes a direction downwards towards the abdominal muscles, and in such a manner that its larger curvature is directed downwards, while its smaller one takes an upward direction.

The food, in general only grossly divided, which has been received into the stomach, cannot in this state escape through the pyloric orifice. The valve of that orifice, and the contraction of the strong muscular fasciæ which surround it like a circle, will not permit it to pass into the duodenum. The horizontal position of the body of the dog and the horse which causes the stomach to be found nearly on a level with the termination of the œsophagus, would seem to suggest the idea that the return of the aliment through the œsophagus would be easy; but this cannot ordinarily take place, on account of the contraction of the muscular membrane of the œsophagus, which is much thicker and stronger than that of the stomach. Besides, the œsophagean canal is contracted upon itself whenever it is empty, and it is only during the act of deglutition that it is forced into a state of distention. As soon as, by its contraction, it has forced the pellet of food into the stomach, it returns to its ordinary state of contraction and occlusion, so as to render the return of the food, by any natural process, impossible.

The contraction and the occlusion of the cardiac and pyloric orifices, by the contraction of the muscular rings which surround them, are so considerable, that even, when we take out the stomach of an animal immediately after death, these orifices will scarcely permit a particle of food to pass, as we have many times seen.

Sir Everard Home pretends to have observed that the stomach of dogs during the process of digestion experiences a contraction about the middle of it, so as to form it into two cavities,—a cardiac and a pyloric. He adds, that the first contains the aliment grossly comminuted by the act of mastication, and the portions of food which have been last swallowed, while the latter is destined for the more perfectly dissolved and half digested contents. We have never seen this division of the stomach in any of the numerous experiments which we have made on the dog, the cat, or the horse, therefore we do not hesitate to consider it as a groundless hypothesis, founded on careless or inexact observation.



## THE PERISTALTIC MOTION OF THE STOMACH.

The living stomach, distended by the mass of aliment introduced into it in the process of deglutition, reacts upon it by the contraction of its muscular tunic. The food, as much by its volume and its weight as by its chemical properties, produces a stimulating effect on the stomach, and causes it to contract. Walæus, Wepfer, Peyer, Sprægel, Schlichting, Schulz, Felix, Haller, Spallanzani, and others, have observed the motion of the stomach in animals opened when alive, as dogs, cats, pigs, &c. We have uniformly observed it more or less distinctly in the animals on which we have experimented.

The motion is in general vermicular, very slow, and often scarcely perceptible. It is this which has caused so much doubt upon the subject in the minds of some physiologists. The contraction is not simultaneous in the whole extent of the stomach;—it is always partial, so that while one part of the stomach is slightly contracted, another is dilated—and when the second is contracted, the former is dilated. The portions in which the contractions are taking place are thicker, and more rugous. The alternate contractions and expansions not only take place across the stomach, but along it, with reference to the direction of the muscular fibres.

During the greater part of the time, the movements, which are undulatory, are in a direction from the œsophagus towards the pylorus, and from the pylorus towards the œsophagus. We have sometimes seen the contractions commence at the two extremities of the stomach, and unite at the middle of it. The strongest and the most sudden contractions are in the neighbourhood of the pyloric orifice, where also the muscular coat is thicker than any where else. The degree of the contraction of this membrane, and the quickness of the various motions, appeared to depend on the stimulation produced on the stomach by the food. In dogs and cats, that had been fed on bones, bread, flesh, fibrine, and the white of eggs coagulated by boiling, the movements of the stomach were strongest and most active.

The consequence of these successive contractions of the muscular membrane was that the aliment moved slowly through the cavity of the stomach, and that the portions which were dissolved were pushed on towards the pylorus. They escaped through this opening in small quantities during the expansion of the circular fibres which guarded it, and thus passed into the duodenum. The peristaltic motion of the stomach continued until the food was completely dissolved by the gastric juice, and it had entirely passed, although little by little, into the duodenum, through the pylorus.



The viscus then resumed the state of universal contraction by which it is characterized when empty.

Some physiologists, as Pitcairn, Senec, Hecquet, and others, attaching very great importance to the movements of the living stomach, have maintained that the aliment is, by means of these movements, broken down and comminuted, and converted into a pultaceous mass: but the experiments of Reaumur and Spallanzani on several of the mammalia have completely refuted this erroneous theory. Reaumur proved that digestion in the stomach of the dog was not accomplished by trituration, by making the animal swallow fragile and compressible tubes filled with food, the sides of the tubes being pierced by numerous small holes. The form of the tubes did not undergo the slightest alteration in the stomach, but the food which they contained was completely dissolved. Spallanzani performed the same experiments, and with a similar result.

#### THE AUGMENTED SECRETION OF THE GASTRIC JUICE.

Having reached the stomach, and come into contact with its mucous membrane, the aliment has an exciting influence upon it, by means both of its mass and its chemical properties. It thence results that the arterial blood now flows in a larger stream into the vascular tissue of this membrane than when the animal is fasting and the membrane unexcited, and a red tinge begins to appear. At the same time the gastric juice is secreted more abundantly, and appears in the form of a greyish white fluid, a little clouded and mixed with mucous flocculi. When, in its empty state, and no agent exerts its influence upon the stomach, its walls are scarcely moistened; but when it is stimulated either mechanically or chemically, a copious secretion of the gastric juice ensues. The quantity of the gastric juice secreted during the process of digestion appears to depend on the degree of excitation produced by the aliment. We have found most of this fluid in animals that had eaten bones, cartilage, fibrine, cheese, butter, the white of an egg boiled, gluten, flesh, and bread; and less in those to whom substances mild and easy of digestion had been given, as gelatine, gum, starch, &c. The quantity of the gastric juice is then proportionate to the digestibility and dissolubility of the alimentary substances. More is formed after the use of food difficult to dissolve and to digest, than after that which is more susceptible of solution and digestion; in other words, the former produce a stronger and more prolonged excitation than the latter.

#### THE ACIDITY OF THE GASTRIC JUICE.

The food, of whatever nature it may be, becomes acid and reddens the tincture of turnsol after it has been penetrated by the

gastric juice. We have found this in every experiment on the horse, the dog, or the cat; but the degree of acidity varies according to the nature of the food. The tincture has been most decidedly reddened in the dog, after the white of egg, fibrine, butter, cheese, gluten, milk, meat raw or cooked, bone, cartilage, and barley-bread, had been given. It was less decided when starch, rice, or potatoes, had been used. It was least of all decisive, or rather it was scarcely perceptible, after we had given the white of a raw egg—this substance containing a little alkaline carbonate, which had, probably, partly saturated the acid of the stomach. The red was more intense in horses that had been fed on oats, than in those to whom starch had been given in any form.

It is evident from this that the degree of acidity in the gastric juice corresponds exactly with the greater or less facility of solution, or, in other words, with the greater or less solubility of the food. Bones, cartilage, fibrine, cooked albumen, caseous matter, flesh, gluten, and bread, are more difficult to digest than starch, potatoes, rice, gelatine, and liquid albumen. This may be expressed in another way—the degree of acidity of the gastric juice depends on the degree in which the mucous membrane of the stomach is stimulated by the food.

As to the nature of the acids developed in the gastric juice in the process of digestion, they are the same as those which we have found in animals whose stomachs, in a state of fasting, have been stimulated by mechanical agents: they are the hydrochloric, the acetic, and the butyric.

#### THE SOLVENT ACTION OF THE GASTRIC JUICE ON THE ALIMENT.

Being mixed with the aliment, the gastric juice softens and dissolves it. If it is naturally soft, or is comminuted and rendered pultaceous by mastication, the gastric juice penetrates it, and rapidly converts it into a fluid. If, on the contrary, it has a certain consistence, or if it is swallowed in masses too voluminous, its softening and solution are slowly effected, layer after layer, and from the outside to the centre. It often happens that the surface is already reduced to a *bouillie*, while, interiorly, the food preserves its consistence, and has not undergone any change. The dissolved portion is slowly pushed towards the pyloric orifice by the pressure which it exerts on the alimentary mass.

The time which the alimentary substances demand in order to be dissolved or digested, varies considerably, according to their chemical composition, or their solubility in the gastric juice.

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# STRAY PAPERS ON VETERINARY JURISPRUDENCE, INCLUDING MEDICAL ETHICS.

ADDRESSED TO VETERINARY STUDENTS.

By THOMAS WALTON MAYER, *Esq.*, *V.S.*, *Newcastle-under-Lyne.*

## LETTER II.—PART I.

“Omnis medicina a Deo est. Cœlites delapsa non sine Dei consilio vivit agitque. Hinc ars nostra sine religione, vel impia vel nihil.”

IT has with truth been observed by a writer of Medical Jurisprudence,\* that “It is not easy to conceive the reason why the cultivation of ethics, a matter of primary importance to the success of medical practitioners in the commencement of their career, should be almost totally neglected in the medical schools of an age so enlightened as the present. The fact is so, however incomprehensible it may appear. It is now the custom to initiate men into the mysteries of medicine without the slightest allusion to the duties they owe each other or the public, or the difficulties to be encountered on the commencement of their practice. Hence arise the frequent misunderstandings, disputes, and improper behaviour between medical practitioners which are so disreputable and injurious to the dignity and interests of science.” Nor is it easy to imagine the reason, since so many misunderstandings and disputes have existed amongst the veterinary profession, that these have not been traced to their proper source, and, the want of mutual understanding and explanation having been felt, more urgent means have not been devised in order to administer a remedy. This remedy has just been stated to you to be the cultivation of Medical Ethics.

The due cultivation of this important branch of our subject I at once declare to you is absolutely necessary in order to accomplish those results which are expected to follow from a more extended inquiry into veterinary jurisprudence. It will I am sure, my friends, be self-evident to you that the consideration of the duties that relate to yourselves—your general professional conduct, whether to your brethren, your employers, or your patients—is not an affair on which a thoughtless jest may be inflicted, a scoff or a sneer passed upon it—a matter which may be considered at a more convenient opportunity; but the honour and dignity of that profession of which you are now to become members *imperatively demand* that you

\* Ryan's Medical Jurisprudence, a work to which the author expresses his obligations.



should be well acquainted with those details which shall ennoble your conduct in the eyes of the world, promote good fellowship and good feeling among yourselves, and raise veterinary jurisprudence from that gulph in which it is now enchained by the *opinions of the veterinary profession itself*.

In the medical profession you are perhaps aware much is expected from those who are aspirants to the rank of fellow members. It is required that they should be of good education, gentlemanly behaviour, as much depends in after-life upon their moral conduct and general deportment while young. Advice has been laid down by some of the ablest men of that profession for the general benefit of the whole; and in order to guard as much as possible against ungentlemanly and disreputable proceedings, especial rules have been framed by some of their colleges, and an oath is required by the Edinburgh University before any one is admitted to his degree. After an invocation of the Deity, the graduate pronounces these words: "Tum porro artem medicam cautè, castè, probèque exercitaturum, et quoad potero omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum, quæ denique inter medendum visa vel audita silere convenit non sine gravi causa vulgaturum. Ita præsens spondenti adsit Numen!" "To practise physic *cautiously, chastely, and honourably*, and faithfully to procure all things conducive to the health of the bodies of the sick; and lastly, never, without great cause, to divulge any thing that ought to be concealed, which may be seen or heard during professional attendance. To this oath let God be witness."

In the rules for regulating the conduct of physicians, it is expressly stated, "If many physicians be called to a patient, they are to consult with great modesty, and in the absence of witnesses or unprofessional persons. Nor shall any one prescribe or insinuate what is to be done to the sick, or by the attendants, before he has stated his method in consultation. But as medical men have different opinions, so that they may not agree in the plan of treatment, they are to conduct themselves with the greatest prudence and moderation, the ordinary attendant shall signify to the sick and attendants their dissension, so that it may appear as slightly disagreeable to the patient or his friends as possible."

These and many such like laws are found to be of great benefit. But it is not necessary for us to confine ourselves to facts like these in order to shew the great benefit it would be if we possessed within ourselves such laws as shall fit us for the important duties before us. There have been cases, and there are instances daily occurring, which prove that there is in veterinary science a want of an established code of veterinary medical ethics, and that the profession sustains great injury from the want of it.



Let us examine a little into these points ; for unless I can establish this part of my subject, I shall lay myself open for it to be said, that what is proper for a human surgeon and the laws that are laid down for his guidance, cannot, by any possibility, hold good for the veterinary surgeon, and that I am deluding myself and others by such uncalled for reasonings from analogy. Let facts speak for themselves. It has been said, and with great force and truth, that a "veterinary surgeon is by profession a *gentleman*." Bear, I beseech you, this in mind through the whole of these papers ; because as such the public, and our brethren especially, expect from us that we exhibit those marks which characterize a true gentleman ; and wherever you see this to be totally wanting, you perceive at once the result of a want of a due cultivation of veterinary medical ethics. In the regulations of the College of Physicians relating to consultations, you see on an analysis that it at once embraces the several duties of the practitioner, and inculcates brotherly feeling. Now, did you ever hear of the principle of such a regulation as this acted upon by the veterinary profession ?—or, rather, did you ever hear it said by a veterinary surgeon, speaking on the subject of consultations, "We were at the outset of our career friendly to these consultations ; and, when the matter rested with us, there was one gentleman whom, for a little while, we used generally to call in. We were, after the second or third time, somewhat dissatisfied with his manner ; and, at length, there seemed to be such a frequent and almost inseparable connexion between the visits of Mr. — and the loss of our employer, that we began seriously to take alarm. We believe that we were always scrupulously punctual in engagements of this nature ; but the consulting surgeon used often to be a quarter or half an hour before his time ; therefore we missed him altogether, or only saw him when he was about to get into his gig and drive away. He never used to wait a moment for us, but proceeded to examine the patient, and question the groom or coachman with many a consequential *umph* ! and, *ah* ! and then he had his regular interview with the proprietor. At first, he did us the favour, or the right, to say that he would not order any particular medicine until he had communicated with us, or, probably, observing our dissatisfaction, he was a little more punctual ; but there was not an action or a gesture which did not bespeak the great man lending his assistance to a mere understrapper. The questions put to us were demanded in as authoritative a tone, or even more so, than to the underlings of the stable ; and, after he had obtained the information he required, his opinion was given without reservation in the stable, and before the groom's fault was found with this medicament, and another was ordered to be substituted : and then came the cold withering commendation—"He dared to say

Mr. — would do all that was necessary, and that he would call again in a few days to see that all things were going on well." The mystery was now unravelled, and afterwards we determined to have nothing more to do with Mr. —. A circumstance occurred a few days afterwards which perfectly settled our resolution. A horse belonging to a titled lady had been very ill, but was recovering securely enough, yet not so rapidly as to keep pace with the impatience of the owner. One morning we were desired to be at the stables at a certain hour to meet Mr. —. We were there to a minute. "I am afraid, Sir," said the coachman, "there is something wrong. Mr. — has been here, and he has been with my lady in the drawing-room, and we heard him talk about coming again to-morrow." The coachman was perfectly right. We desired that Lady — might be informed that we were waiting, and we received in answer, that her ladyship did not wish us to call again, and that we might send in our bills as soon as we pleased. It may be supposed that we never sent for Mr. — again: but we did, again and again, refuse to meet him; always giving our reasons why, and that without hesitation or scruple. About a month afterwards, however, we had another precious sample of the mingled ignorance and impudence, and rascality (we were going to say) of those who from their situation ought to be lights to their professional brethren. We were attending a young and very promising horse, on which the owner put great value. It was a case of suppressed strangles. The tumour was, at length, beginning to come forward; but the owner was impatient. We received a note, in which we were requested to attend at a certain hour, in order to meet Mr. —. We were punctual to our time, and we found, not Mr. —, but one of the persons about his establishment. He had been in the stable about five minutes; and, without the common courtesy of waiting even that time, he had satisfied himself about the case, and had his lancet out, and, in another half-minute, would have bled the horse. Years passed, and we were afraid to call in any one. When we saw our way tolerably plainly, we resisted, so far as we could properly do so, the wish of our employers on this point, and, perhaps, our practice is yet a little tainted by this dislike. We have, however, of late years, occasionally fallen in with gentlemen and honest men in these meetings; and yet, if we dared to tell them so, we were not quite satisfied even with them. It is not yet the consultation that we could wish\*."

No apology will be expected by you for such a lengthened quotation as this, because the facts brought forward are by no means solitary instances in the veterinary profession; and they serve as

\* See *Veterinarian*, vol. vi, p. 133, and vol. ix, p. 21.

beacons for you, to warn you against falling into such like errors. Nay, more, such facts, and many more that I could adduce, cannot fail to produce on your minds the conviction that, in order to avoid such representations as these,—to promote good fellowship and good feeling amongst ourselves—to fulfil our duty to our employers, and to shew ourselves GENTLEMEN, we should follow those rules of conduct which will produce so desirable a result.

What are these rules?

[To be continued.]

## PARTURIENS MEDULLITIS.

*By E. A. FRIEND, Esq., Walsall.*

Dear Sir,—IN the last communication I had the honour to address to you on the subject of puerperal fever in cows, I stated, in endeavouring to trace this disease through its symptoms and effects to its cause, that I had no doubt that it originated in chronic disease of some part of the spinal columns or cerebral viscera, and that this disease was brought to a crisis by some peculiar circumstances connected with parturition. I intended then to have stated distinctly what those peculiar circumstances were, and was quite unaware of the omission until I afterwards saw it in THE VETERINARIAN in the incomplete state in which it there stands. I now beg that you will indulge me with a little space in your next number for the remarks herein sent; and I hope that they will be found to furnish what has hitherto been wanting on this subject, viz. the predisposing and immediate cause of this complaint.

It will be unnecessary again to endeavour seriously to combat with the supposed causes which have hitherto been stated to produce this disease, because they decidedly contradict each other; and it is known to take place in all the extreme opposites of these said causes, as often as in those which different practitioners have assigned as producing it: in fact, they appear now to be all given up as by common consent.

The predisposing cause, then, is, as I have before stated it to be, chronic disease of the spinal columns\*. That this is one of the most common affections to which cattle are liable—either as a primary disease or as one in connexion with some other—is proved by every day's experience; and it is to this that I have before pointed. I again most urgently repeat the caution, that if the farmer would avoid this fatal malady, he must not neglect to combat it in

\* I am of opinion that there are a few cases not referrible to this cause, but produced by direct injury to the nervous system during parturition.



its incipient state. Every one in examining a beast for any internal disease makes himself aware of the important fact, when it exists, that there is disease of the spine. I allude now to the universal custom in all these cases to apply pressure to the spine, particularly in the neighbourhood of the lumbar vertebræ. And it is a remarkable exposition of our want of knowledge or attention to diseases connected with or dependent upon the nervous system, that no one has thought it necessary to attack the disease directly and locally. At least such practice has not been inculcated in the schools, or directed in the various publications which have appeared on the diseases of cattle. I have found it a very great improvement in my own practice to employ a stimulant application to the spine in all cases of disease where it is evidently affected: and I am quite sure that this alone would be sufficient to remove many slight cases of indigestion, &c., though it would not be good practice to neglect the diseases in the system occasioned by the effects, while attending to the cause alone. It is not always safe to reason from analogy in pathological matters; but I cannot avoid referring to a familiar case or two in order to strengthen my opinions on this subject. I will notice first the teething of infants. The derangement to the general system in these cases is often of the most serious kind, communicated through the medium of the nerves which are injured by the cutting of the teeth. Again, in the horse, lock-jaw and torpor of the stomach and intestines have been too painfully obtruded on the attention of the veterinarian from the same cause (injury to the nervous system) to make it necessary to do any thing further than simply to mention it.

Another case, familiar to every one of us, will be readily called to mind if I mention anasarca of the cellular membrane in the hind extremity, particularly where the deposition has been very sudden. We have all seen cases, approaching the appearance, in other respects, of intense pneumonia, produced by the disease in the nervous system, occasioned by the pressure on the branches in the nerves, in the part first affected.

In an article in *THE VETERINARIAN* for January, p. 7, Mr. King has very justly remarked, that no other animal is subject to this specific disorder. This is a strong fact in favour of my doctrine. In no other animal is disease of the spine so prevalent, or, if found to exist, so totally neglected. In the horse, for instance, it often occurs from accident; and I have seen him down from this cause and quite as helpless as a cow with puerperal fever, though, in this case, the remedy is always applied directly to the part affected.

The prevalence of this complaint in cows may, perhaps, be partly accounted for by the peculiar formation of the spinal vertebræ, the very great weight of food they carry in their stomachs and



intestines, and, particularly, the immense demand constantly made on the energies of the nervous system connected with indigestion.

Having said thus much on the predisposing, I come now to the immediate cause; and I think I shall be able to give a satisfactory reason why it occurs after parturition rather than at any other time. This is not quite an invariable rule, though sufficiently so to make it of consequence enough to account for it as if it were a general principle. The reason why they fall at this time in preference to any other, is owing entirely to mechanical alteration of structure. That there is a decided difference in the pelvic structure at this time is well known, and the eye of an anatomist will easily detect that there is a greater depression on that part of the spine most affected in this disease than at any other period; and this it is which, superadded to existing disease in these parts, produces that paralysis which is the essential feature in puerperal fever. It will be well to notice briefly how this opinion coincides with authenticated facts. It was well observed by Mr. King, that in his practice no case had occurred of puerperal fever following after much manual labour had been exerted in the extraction of the fœtus; and this is borne out pretty generally by the testimony of others. Allowing my doctrine to be correct, the reason of this is obvious. What are the cases that require generally the greatest efforts in the removal of the young animal? The answer is plain and simple. Those in which there is the least alteration in the maternal structure, and hence there is less liability of adding injury to a part already suffering.

I was led into the train of reasoning which induced me to adopt the opinion herein promulgated partly by the following circumstance. It will serve to illustrate another important fact, equally as generally acknowledged as the one just mentioned.

The circumstance I allude to is, that cows that slip their calves are seldom attacked by this specific disease. There are exceptions to this rule also, and that which I am about to mention is one. I was called in to look at a cow belonging to a gentleman in Walsall, that had slipped her calf. Though it was an immature fœtus, yet the cow was some time unwell, and was a long time in expelling it. I saw her fortunately just before she fell, and the first thing that struck me was the decided alteration in structure which I have before mentioned—a very great sinking of the lumbar vertebræ, equal, I should judge, to one that had gone her full time. She was a very fat cow, and her owner had her slaughtered soon after she fell. There was no disease whatever apparent but of the medulla spinalis: the membranes of it were very turgid, and the portion contained in part of the dorsal and lumbar vertebræ was much softened. Here, then, this fact seemed to point out

the reason why cows do not generally have puerperal fever supervening upon slipping the calf, and why, in this particular case, the animal did have it. The difference simply was, the alteration in structure, occasioning additional pressure upon a part already affected. I think I could pursue a satisfactory train of reasoning to connect every established circumstance attendant upon puerperal fever with previous chronic disease, or alteration of structure wholly producing or adding to disease already existing directly in the spinal columns, or communicated through the medium of nerves injured during the time of parturition, and occasioning the paralysis confessedly the predominant symptom in the disease; but, perhaps, it is needless to pursue the subject further, except to answer a query of Mr. King's. Alluding to one of his own cases, he says, How is the sudden disappearance of the complaint, and almost complete restoration of healthy action, to be accounted for, as in case II? I answer, From the well-directed efforts of the veterinarian, aided by a wise and beautiful law of nature, which ordains that her earliest and utmost efforts should be directed to restore and harmonize that structural derangement necessarily attendant upon parturition. Mr. King had assisted to get rid of the artificial burden (the contents of the stomach), he had stimulated and assisted the nerves, and Nature performed the rest. On no other principle than a restoration of nervous energy from a state of paralysis could it possibly be accounted for.

I conclude by offering to your attention the name with which I have headed this article, as one which better combines the true nature of the disease with the particular circumstances under which it occurs, than the old term, puerperal fever.

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## REMARKS ON THE STETHESCOPE, AND ON BACK- RAKING.

*By WILLIAM MOGFORD, Esq., Guernsey.*

Dear Sir,—IN looking over a few numbers of your valuable miscellany for the last year, several cases therein specified, as well as the different opinions to which they have given rise, have again attracted my attention, and induced more matured reflection than they did at the time of their publication. The more so, as in the course of my practice, facts have since come under my observation, calculated, I think, to justify and confirm the views I had previously formed on some of the points in question.

It is after considerable hesitation that I venture to make this communication; and I trust it will be attributed to the motive which alone actuates me, the desire I feel, in common with yourself, and the gentlemen more immediately alluded to, by adducing the fruits of professional engagements and the frank advocacy of our several opinions, to elucidate truth, and further the end to which your excellent periodical so efficiently contributes—a more scientific and successful practice.

Apart from this my only purpose, the uniform courtesy and the many acts of kindness they have extended to me, as well as the high opinion I have formed of the judgment and skill of the gentlemen on whose views I shall take the liberty of animadverting, would have kept me from broaching, in this form, opinions at variance with their own.

Let me first advert to Mr. Baker's interesting essay on the *Stethoscope*, given in "Abstract" for 1837-8, p. 126. No one will dispute the beauty of the invention; and, bearing in mind the many instances in which it has been successfully applied in the human subject, no one will say it ought to be lightly laid aside. Perhaps, it must be conceded that, with some practitioners naturally endowed in a higher degree than others with the requisites to its successful use, it may yet prove, in very peculiar cases, a valuable agent: but at present, it appears to me (as was more than once observed in the course of the discussion, which took place at the meeting of the Association on the 13th March, 1838), that the serious difficulties and often imminent danger attendant on the application of the instrument, make against its utility. I was recently called in by J. G. Campbell, Esq. to ascertain whether his mare was in foal, and from reading the high recommendation of the stethoscope, was induced to try it, at the great risk of being kicked or knocked down, and could make nothing of it. I then had recourse to my old and never-failing method of introducing my arm up the rectum (to which in my paper on "Diseases of the Spleen," published in the *Sporting Magazine*, in the June number, 1832, I have made cursory allusion), a method which I have followed for more than twenty-five years, and one which, at least so far as I am aware, originated with myself, having never heard of its application before. I have always found it perfectly safe, and have never known any ill consequences to result from it. Examination by the vagina has, for obvious reasons, a tendency to produce abortion; and I have known of two such cases arising from this practice. By my own method I have discovered the foetus three months after impregnation; and it might, I think, be discovered sooner. Both before and after the foetus has left the pelvis, I have generally felt it lying across the pelvic cavity, the spine being immediately under



my hand, the head on the left lateral side, and the tail on the right side.

In regard to back-raking, it is alleged that serious injury may be inflicted on the rectum. Mr. Simonds has some strong remarks in your number for August last, on the fatal effect of this operation, as performed by an ignorant person, in a case which he describes; and an objector might avail himself of such a statement to set it aside altogether. But we are all agreed, I presume, that the proper and legitimate use of a means, and not its abuse, must be our guide. I may add, while on this subject, that a wound in the rectum is not necessarily fatal. I have not found it so. In proof of which I may instance the following cases, for the correctness of which I can vouch.

The first was in a horse, belonging to J. Tucker, Esq., of Northcolts, near Hatherleigh, Devon. The handle of a stable-fork penetrated through the under part of the abdomen, passed through the rectum, and projected through the anus. All the means used in this case were setons, fomentations, and simple dressings, by which he recovered.

The second case was related to me by Captain Woolcombe, of the Royal Artillery, who saw the shaft of an artillery waggon run through a horse in the same manner, and which horse recovered.

The third case was that of a very valuable hunter, by Camerton, the property of John Moth Woolcombe, Esq., of Ashbury, Devon. I had just dismounted from him, and given him to a man to hold. The horse got away, and crossed the country, over some very high gates, one of which was a yard-gate of seven or eight bars, and a little beyond it was a cart, with the shafts resting on a stool. He rushed between them, and the off shaft ran through him, taking the same direction as I have described in the foregoing cases. More than half of the shaft penetrated, and came out by the side of the tail; and both the hooks attached to the staple of the shaft came through. Before I reached the place he had been backed out of the shaft, when one of the hooks came in contact with the large nerve of the thigh, and tore it asunder. Had I been present at the time, I should have sawn off the shaft, and, in all probability, saved the horse. I put him in a frame, bled him freely, and passed a seton through the wound. He was doing well for several days, when locked-jaw came on, and I destroyed him. This occurred twenty years ago; but I have since cured three cases out of four of locked-jaw arising from wounds. One of them was a horse belonging to John Tupper, Esq., of this island. In this case a stake passed through and divided the abdominal muscles, proceeded through the muscles of the thigh, and was arrested in its further progress by the bone. The horse did well



until the wound was nearly healed, when locked-jaw ensued, from which he also recovered. Afterwards, an abscess formed close to the femur, through which I passed a seton. He went short on that leg for a time, but ultimately perfectly recovered.

During a practice of more than thirty-five years, I cannot say that I have known any bad consequences to arise from passing the arm up the rectum; but the advantage it has given me over those of my contemporaries in the same neighbourhood, whose different modes of treatment I have had an opportunity of tracing, has, I think, been considerable.

In stoppages of the bowels, injections are of but little use, unless the hardened fæces are removed from the lower part of the colon. Mr. Simonds appears to argue, that the arm must be simply introduced in a direct line, and pushed onward with a view to pass and withdraw the obstruction, which we know, from the nature and position of the colon, to be impracticable. The method I adopt is applied in harmony with the known anatomy of the parts. Having reached the upper part of the rectum, and acting through the aperture, so well defined by Dupuy, by careful and consecutive pressure on the folds of the colon, gently grasping and breaking down the indurated mass within that bowel, I coax and propel the fæces progressively onwards into the rectum. By this means it has often fallen to my lot, to the surprise and dismay of parties by whom I have been employed, to pronounce cases as hopeless, where no danger had been apprehended. Thus I have discovered enlarged livers, a gorged stomach, a disorganized kidney, and stone in the bladder. A successful practice makes me bold to engage to extract, in less than ten minutes, a stone in the bladder, of the weight of six or eight ounces, without wounding its neck. Such an operation I performed in 1820, with the assistance of one man (a carpenter) and two of my eldest sons, then boys. After the operation, there was little or no inflammation, not the least ill consequence resulted from it, and the horse was soon after hunted as usual.

About twelve months ago, I was called to attend a colt belonging to Mr. George Foot, of this island. His servant stated that the colt was very uneasy, and that he thought he had "a touch of the *fret*." He added, he did not think it worth my while to go and see him; but requested that I would send some medicine, which he would administer. I went, however, and, after I had made my examination, to the astonishment of all present, I gave it as my opinion that nothing I could do would be of any avail, being under the impression, at the time, that there was a stone in the bowels. The next day the colt died. I opened it, and extracted from the bowel, not a stone, but a solid substance, about the size of a cocoa-

nut, consisting of sand and chicken-weed, compressed together into a very hard body, of the above-mentioned form.

About six months ago I was called to a horse, the property of Thomas Brehant, Esq., of this island. Mr. Brehant thought the symptoms very slight and scarcely worth noticing, and would not believe me when I declared I could do nothing for him. I described the case to Mr. Magrath, the medical gentleman who attended Mr. Brehant's family. The horse died soon afterwards, and, upon examination, the correctness of the opinion I had given was established. The kidneys were diseased, the left one was disorganized, and about three times its natural size. When I first called to see the horse, I was led to suspect where the disease lay, from the peculiar manner in which he drew the near hind leg after him. I introduced my hand up the rectum, and immediately discovered its seat. Had I not done this I should have gone on in the dark; for although the symptoms led to a knowledge of the complaint, I could not otherwise have discovered the extent of it.

By this method I saved the life of a colt belonging to Mr. W. Brice, of this island. This animal had been castrated by ligature, and through violent struggling the ligature came away. Every means were resorted to in order to stop the hæmorrhage, but in vain. I then introduced my hand up the rectum, and, by pressure on the abdominal aorta, stopped the bleeding.

Only a few days ago I was called to a horse whose state, at the time I first saw him, and the results consequent on my treatment, illustrate the propriety and efficacy of the method I respectfully but earnestly urge on the attention of the profession. The horse was brought to me evidently suffering from constipation of the bowels. With the two-fold view of guarding against the inflammatory action, and also relaxing the bowels, I bled him freely, and, moreover, administered a full dose of aloes. I did not see the horse for two days: but then I was sent for in consequence of the alarming symptoms which were exhibited. I soon perceived that I had more than an ordinary case of obstruction to deal with, and intimated my apprehensions to the parties, who were the more anxious as to the fate of the horse, having some time before lost a bullock from empirical treatment.

The appearance of the horse, and the stratagems to which he had recourse to obtain relief from the anguish he experienced, while they supported the conclusions I was led to draw, in a remarkable manner illustrated the power of instinct. Such was the pressure on the bladder, that it could hardly retain the urine, which was consequently voided at very short intervals. In order to avoid the pressure of the thigh on the part affected, he raised it

by holding up the leg ; and, being unable to maintain that position without additional support, he placed his head under it, which enabled him to continue in the attitude essential to his relief. After having administered other purgative medicines, followed up by a plentiful administration of chilled water, and injections with Reed's pump, I introduced the arm up the rectum, and, having reached the given point, I worked my hand in such a manner as to cause a change in the position and form of the mass within the gut in which it was locked up ; soon after which the bowel, by its natural effort, was enabled to expel the accumulation, that had previously pressed as a dead weight on the pelvis. That removed, the horse immediately shewed symptoms of returning health, and is now at his regular work, and perfectly well.

In fine, convinced from the many successful results to which I have submitted this test, I am anxious to recommend it to more general application. I feel justified in placing unreserved confidence in its fitness and efficiency ; and, far from shunning the scrutiny of the profession, I would rather invite it. Let my mode of proceeding be compared with the measures usually adopted under similar circumstances, and even under the impression of the professional superiority of many of my brethren, I neither doubt nor fear the result of a rigid comparison.

As a means of instituting such a comparison, I may here allude to what I witnessed about two years since at the Royal Veterinary College. The patient, a grey horse, had been under the care of Mr. Sibbald, and the operation to be performed was that for the scirrhus cord,—every thing that science or experience could suggest or dictate was attempted, but in vain. I ought in candour to allow, that the plan I now suggest did not then occur to myself ; but it is very evident, as has already been shewn in the case of Mr. Brice's colt above described, that had the hand been introduced up the rectum, and pressure been applied on the abdominal aorta, or the iliac artery, there would have been some chance of saving the horse.

My long practice would enable me to multiply cases in support of the object I have in view, but fearing I have already extended my remarks beyond the limits you wish your correspondents to observe, I now conclude.

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## ON TUMOURS IN CATTLE.

*By Professor DICK, Edinburgh.*

ABOUT three years ago, my opinion was requested regarding a disease to which the cattle on the farm of Inver-Brora, in Sutherlandshire, were particularly subject. The following account of the disease was given by the owner, Mr. Hood:—

“I have had the farm eleven years, during which time I have had an annual loss by this disease; but till the summer of 1828, I had not above six or eight attacked in a year. In that season I had about twenty, and in the following year thirty-six. I have often cured them by cutting out the excrescence; but that operation has become more difficult the last three years, owing to its being deeper in the neck; indeed, it is often at the very root of the tongue, and in one or two instances the tongue itself was affected. They are sometimes on other parts of the animal, viz. the flank, back, &c. but in nine cases out of ten, they are in the throat. The cattle I keep are generally purchased at eighteen months old, and I dispose of them in August or September following. I have got them from all parts of the counties of Sutherland, Ross, and Caithness, and find them indiscriminately attacked with it; and when I breed any at home, they are the most unfortunate, having last year lost six out of seven. The months of May, June, and July are the fatal months, though I have sometimes had a few attacked sooner. The manner in which they were kept in the winters of 1827-8 and 1828-9, was upon straw, night and morning, in a dry and well-sheltered fold-yard, and for several hours in the middle of the day they were put into a field where they got as many turnips as they could eat, from the end of October till the first week in May, when they were put to grass.

“The situation of the farm is cold, and exposed to severe gales of wind from the west; but the soil is particularly dry, being a sandy loam, and producing excellent artificial grass. Last year, I bought fourteen cattle in the month of May, nine of which were seized with the distemper; indeed, I find little difference in their being wintered on this farm or otherwise. I should state, however, that these fourteen were in very poor condition when I purchased them. The cattle have at all times a full supply of water; in winter, that of which I sent a specimen to Mr. Lawson, which I believe you have seen; and in summer, the River Brora, of which all the cattle in the neighbourhood drink.

“An intelligent drover remarked to me last season, that he suspected I gave the cattle too many turnips, as small cattle did not



thrive by being too much pampered. I have followed his suggestion so far as to give them less this winter, and shall wait the result. Upon the whole, I am of opinion that it is something in the grass that causes the complaint; but what that is, I can form no idea. I may add, that some of my neighbours have occasionally a beast or two affected in the same way; the Marquis of Stafford had sometimes eight or ten in a season at Dunrobin, but since 1822, it has completely disappeared from thence."

In addition to the above account by Mr. Hood, the following description was given of the disease by a medical gentleman in that neighbourhood:—

"In the summer of 1828, my attention was directed to a number of young cattle who were affected with *encysted* or *honeyed* tumours, situated in the throat, at the superior angle of the lower jaw. When I first observed them they were superficially attached to the cellular membrane of that part, and of course were easily removed by excision (which is the only treatment I have found of the least use); but now they have assumed a more malignant appearance, being firmly attached to the root of the tongue and cartilages of the throat, so much so, as almost to render their removal impossible. The effects of the tumours are an immediate falling off in condition, and great oppression of breathing, and when the disease is allowed to take its course, the cattle generally die within four or five weeks after its commencement."

Besides these, the opinion of an eminent agriculturist was sent me, who, after an attentive consideration of the case, is of opinion that the disease is caused by some insect. "My own opinion," he says, "is, that it is caused by some insect, and the only way to find a remedy is, by a most minute and careful examination of the part, to try and find out what insect it is. Of course this is to be done both by cutting out the diseased part from the beast when alive, and also examination after death. Having found out what the insect is, the cattle might be removed to high ground, lea, or an open muir, while the insect was in the winged state. The common carrion-fly, and a few others, do not continue to be injurious in the winged state longer than three or four weeks, and the cattle would only require to be that time removed from the pastures. Though I may be wrong in supposing it to arise from the bite of an insect, still it would be greatly for the good of the cattle to be shifted to high ground for some time during the heat of summer, as, on their return to lower pastures, they would find the grass fresh and free from the tainted smell which they much dislike in grass which has been trodden and breathed on by themselves. I would also strongly advise salt to be given as a thing which can do no harm; and if it be something in the blood, as it

is vulgarly called, which occasions those tumours, it may be of great benefit. An ounce and-a half to a beast of thirty-five stone Dutch per day is enough, and less, according to the size of the cattle. I think it might be useful to clip away all the hair as soon as the tumour appears, and foment three or four times a day with very warm water, using blanketing, or some such thing, and fomenting for twenty minutes each time. I would wet the place all over with a little laudanum. Let the cattle get plenty of good water at all times, and attention should be paid to the state of their bowels."

Notwithstanding these and some other communications on the subject, I was unable to ascertain satisfactorily the cause of this destructive disease. But as it appeared to me to depend upon some local cause, and as the case was one of considerable importance, and seemed rather mysterious, I resolved to visit the place, in order to make particular investigation, and satisfy myself upon the subject. Having arranged that Mr. Hood should inform me when the disease made its appearance, and having received notice that two had become affected, I set off to Sutherlandshire in June 1832, enjoying, as far as the unfortunate circumstance of a wet day on a stage coach would allow, the beautiful and romantic scenery with which the highlands abound, and which is, at that season of the year, the most richly adorned. Leaving Inverness with the mail, and in passing through Ross-shire, I was kept awake by the interest which the delightful appearance that country exhibits. The richness of the soil,—the luxuriance of the crops, and the highly cultivated state of the lands through which the road passes, almost induced me to believe that I was still in the Lothians. Nor was I less surprised to find the high state of agriculture in some parts of Sutherlandshire, and not a little astonished to see the immense efforts which were made to improve the waste lands, and the success with which those efforts had been crowned, where the improvements had been completed; but, with the means and inclinations which the late Duke of Sutherland possessed, there is no end to the improvements which may be made in the country. Leaving Golspie, where I was kindly met by Mr. Hood, and passing along the road towards Brora, by the fields which are connected with Dunrobin, I still found the same healthy and luxuriant state of vegetation which had been so conspicuous in the latter part of my journey: but when I had gradually emerged from the shaded and more sheltered parts, I had then before me a country of somewhat different aspect—a pretty extensive tract of flat ground, closed to the right by the sea, to the left by hills of considerable altitude, running in a south-west direction, and, before me, hills extending from the north-east to the south-west,—the whole enclosing a trian-

gular-like space, almost a dead flat. The hills in front approaching each other formed Glen Brora to the west, from which the river Brora runs into the sea at Brora. The farm of Inver-Brora stands nearly in the centre of this flat, which is, perhaps, not one hundred feet above the level of the sea, and is thus exposed to the chilling wind from the sea on the east, and to the concentrated blasts which sweep down Glen Brora on the west. In one part of the farm there is a bank, which, in a great measure, shelters the field next it from the sea breezes, but at the same time it exposes it in a greater degree to the western gales, which Mr. Hood informed me were extremely severe. Another field or haugh was protected from both; but from the richness of the soil, this part of the farm is kept always in tillage, and the cattle therefore derive no protection in it. There is not a belt of wood on the farm to afford protection from any wind that blows. The farm-steading, as Mr. Hood states in his letter, was good and commodious, the situation dry—the soil light and dry—the water slightly inclined to a mossy tint, but sufficiently good—the grasses on the farm had been examined by an excellent practical botanist, and nothing unusual or noxious was found, but still the disease continued to prevail amongst the cattle on the farm.

There were two of the cattle affected with the disease, and Mr. Hood placed them entirely at my disposal. The one was immediately destroyed, for the purpose of examining into the nature of the disease; and I proceeded to attempt the removal of the tumours from the throat of the other. On dissecting the first, I found the tumours presented a somewhat malignant character, being what is usually called *medullary sarcomatous* tumours: but these I found varied in their character, and in some cases proceeded to form an abscess, which, when laid open, frequently healed up kindly, and the animal afterwards did well; while, in other cases, the tumours remained in an indolent state for a time, and then increased in size, without, however, proceeding to a free suppuration, but continued to increase, until by their bulk they interrupted inspiration, prevented deglutition, and destroyed the animal by the continued irritation they kept up. The lymphatic glands of the throat seemed to be the parts most liable to be affected; but the disease occasionally attacks other parts of the body. In some cases, these abscesses form, open, and discharge pus for a time; but gradually falling into an indolent state, the matter becomes unhealthy, and sinuses are formed which assume the character of chronic disease; while in others the abscesses, after forming to a considerable length, stop short, the matter becomes partly absorbed, and the whole assumes a chronic character, with the medullary-like appearance I have already noticed.

I may here remark, that there is in cattle a strong tendency to



this form of disease, under every circumstance in which a part is either inflamed from internal derangement or from external injury. There is in fact, it appears, a weakness of constitution in cattle, from which their diseases have a strong tendency either to run rapidly into putridity, or to sink into the chronic form of the disease now in question. The constitution of their blood has a tendency to lead to this supposition, for in cattle there is never to be found, so far as I have seen, that separation of the constituent parts, by which, what is termed the *buffy coat*, is made to appear. Hence, with such a constitution, cattle exposed to any cause or causes which keep up a continued action on their system, must have a strong tendency to the kind of disease to which we allude.

In the case of Mr. Hood's cattle, the cause appears to me to be the want of proper shelter. "Driven by the wind, and battered by the rains," for the greater part of the year upon an open flat, without either natural or artificial shelter that they might have recourse to when necessary, their constitution is unable to bear up against it, and this form of disease is the consequence, which, like strangles in horses, seems almost exclusively to attack young animals. Indeed, it appears to me to be an analogous disease, for at Inver-Brora it had long been remarked that milch cows were not liable to the disease. To this general remark, however, there are some exceptions; because in the part of the country around Edinburgh it has occasionally made its appearance among milch cows as well as young stock; but, of course, the proportion of young to old cattle in this part of the country is very small, when compared to what it must be in a grazing district. In alluding to this view of the subject, it is necessary to remark that, although the disease has not to my knowledge shewn itself to such an extent on any other individual farm, I was at once convinced, when I saw the cases at Inver-Brora, that it was not so rare a disease as I at first imagined; and I found on inquiry that it had been observed in some parts of that neighbourhood. At Dunrobin it had occasionally occurred as stated in Mr. Hood's letter, but had almost now disappeared. This circumstance, however, only served to confirm me in my opinion of its cause; because I saw that belts of fine thriving plantations had been gradually rising up, and now formed a complete shelter to the cattle which pasture there, more especially sheltering them from the sea breezes, while the hills defend them from the land winds. Mr. Hood found, too, that a change of situation had often an effect in checking the progress of the disease, or of effecting a cure. In some instances he drove his cattle to another farm, where, although a higher situation, there was more uneven ground, and of course, more shelter. The circumstance is of itself sufficient to shew, and from what I have before stated it must be evident, that the disease is produced by local causes, and that those are



what I have alluded to. Mr. Hood states, that his cattle were kept in a well sheltered straw-yard from October to May; but that they were put to the fields for several hours a-day. Now, it is probable that from the circumstance of the straw-yard being comfortable, the cattle would be thereby rendered more susceptible of injury when turned out from it to the cold and exposed fields in which they receive their turnips. That the disease arose from atmospherical causes seems also evident from the circumstance of a malady very analogous having prevailed this summer amongst horses in several parts of the country, in which the lymphatic glands of the throat seemed to be the parts most conspicuously affected; and this disease has undoubtedly arisen from the state of the atmosphere.

The disease, when it occurs in the southern parts of Scotland, is commonly known by the term *Clyers in the throat*, and seems to be very analogous to strangles in horses. The treatment, however, is somewhat more difficult in cattle than in horses, and its effect more fatal; for, as I have already stated, there seems to be a weak or depressed state of the system connected with it, and the disease, from this cause, instead of proceeding to suppuration, and forming an abscess, which bursts and discharges itself freely, as in horses, often assumes an indolent state, and discharges but a little from different points, and afterwards forms sinuses; or the matter is partially absorbed, and a tumour is formed. I have been informed by eminent farmers, that cattle bred *in-and-in* are very subject to clyers in the throat, after they have attained their first year. These clyers affect their breathing at all times, but do not prevent their feeding till the act of deglutition is rendered painful by the enlargement of the tumour. Young queys are most susceptible of this disease, which, of course, renders them unfit to be kept for breeding. This fact still corroborates my view of the disease; for it is a well-known circumstance, that breeding cattle *in-and-in* renders their constitution very delicate; and were the facts correctly ascertained previous to the symptoms of that disease appearing, I have no doubt they would be found to have arisen from injurious exposure to the weather.

From this view of the disease, it becomes necessary to attempt the cure by confining the animal in a comfortable byre or shade, and increasing the strength of the system by a nutritious diet, combined with tonic medicines, such as the sulphate of iron, in doses of 2 drachms to a middle-sized two or three year old, once a day, in a little gruel, or five grains of iodine in gruel night and morning. The tumour should be laid open if matter is to be felt; but if not, a blister should be well rubbed into the surface of the swelling, and repeated until there is either absorption of the tumour or the formation of an abscess. Should this plan not answer, in

raising an energetic action in the tumour, iodine in the form of ointment, 2 drachms to 4 ounces of lard, should be well rubbed into the tumour every day until absorption of the tumour takes place. If it is still found that the tumour resists these remedies, it should be freely cut into with a lancet (as there is always some matter in the tumour), and a little tow put into the wound twice a-day, smeared with blistering ointment, or dipped in a strong solution of sulphate of copper.

In the early stages of the disease in the animals which seem to have a more robust constitution than is generally the case in those attacked with the disease, it may be worth while to try what can be done to stop the progress of inflammatory action by bleeding and purging; but it will in general, I think, be found that this plan is not to be put in competition with the one I have already recommended.

Where the disease seems to rage to the extent it has done in Inver-Brora, some means of *preventing* the disease is preferable to curing it; and as I think I have shewn that it depends so much on the want of proper shelter, it will become worth the consideration of the proprietor or farmer in such situations, where no other plan to insure the same success can be attempted, to try the slow but sure remedy of belts of planting, so disposed as to protect both the cattle and the crops, and thereby improve the farm for every kind of agriculture.

*Quarterly Journal of Agriculture.*

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## ON THE MEDICINAL EFFECT OF THE YEW SEED.

By W. J. T. MORTON, *Esq., Lecturer on Chemistry and the Materia Medica at the Royal Veterinary College.*

MANY are the discrepancies, as you know, respecting the action of yew on our domesticated animals. I do not, for a moment, hope to be enabled to reconcile the conflicting statements; but the following experiment seems to possess some novelty and interest:—

The yew (*taxus baccata*) of which we have but one, or, at the most two, known European species, belongs, according to the late Professor Burnett, to the family of pines, a numerous and important class of trees.

He says that “the succulent coat of the yew-berry has a sweet and sickly taste; it is, however, wholly innoxious, although the seeds are said to be unwholesome. The leaves also are poisonous, at least to some animals; for, notwithstanding deer, sheep, and

goats, are said to be able to feed on them with impunity, a very small quantity, taken as food, will destroy both cows and horses. Several fatal accidents, shewing the poisonous properties of the yew-leaves, have, within a short time, occurred. In one of these, three horses, taken to be sold at a country fair were tethered to the churchyard railings, over which some yew-boughs hung. The horses ate the leaves, and were all killed by their repast."

"On the authority of an Italian physician, it is stated that the yew-leaves, when administered in small doses to man, have a power similar to that of digitalis over the action of the heart and arteries,—reducing the circulation; and, if persisted in for too long a time, or given in too large doses, they are as certainly fatal as foxglove. Yew is, however, reported to have one decided advantage over digitalis,—its effects not accumulating in the system; so that it is a much more manageable and equally efficient remedy. Such being the case, it is to be regretted that it has not been introduced into the British list of medicines."

The perfect correctness of the first of these paragraphs will be doubted, when reference is made to the cases recorded in *THE VETERINARIAN* by Messrs. Beeson, Mogford, Simonds and Spooner; to which may be added the fact of many deer having been destroyed in the Earl of Egremont's Park by the chippings of the yew-tree incautiously thrown in the way of these animals. For my own part, I have no doubt of the narcotic influence of the yew; but as yet we know not enough about it to warrant our speaking positively respecting it.

It is possible that the second paragraph which I have selected may induce some of our friends in the country to give it a trial as a medicinal agent, and this will go far to settle the questions that have been mooted by different experimenters.

My immediate object in addressing you is to state the result of an experiment instituted by me with the *seeds* of the yew.

Mr. Cartwright, of Whitchurch, kindly furnished me with a few ounces of these seeds, remarking that he was not aware that they had been given in any considerable quantity, with which I concurred.

I gave two ounces bruised and made into a mass, with linseed meal and treacle, to an aged and apparently healthy ass, and which he ate with avidity. I directed him to be kept from food, but allowed him water, of which he drank freely. The pulse at the time of the exhibition of the yew was 52, and the tone of it natural; the respiration 12 in the minute.

Two hours afterwards the pulse had risen to 56; and when four hours had expired the number of pulsations was the same, but their tone was softer: the respiration, too, was a little altered, the abdominal muscles being called more into action than is natural. At



the termination of the eighth hour the pulse was 60, the breathing was deeper, but the number of respirations the same as at first. The pupils were dilated, and the conjunctival membrane pale; the powers of life were depressed, and a seeming unconsciousness prevailed. Before the administration of the yew-seeds the animal was very lively and even vicious; hardly allowing any one to approach him. Now it was evident that a marked change had come over him: he was altogether indifferent to persons and to things; and for food or water he evinced hardly any desire, a little of the latter only being partaken of by him.

When ten hours had passed, these symptoms had undergone but little alteration; and as this was 10 P.M., the animal was left for the night.

On the following morning these effects of the yew-seeds had passed away, and their sedative influence on the heart, the pulse being only 46. The animal was much more lively, although he did not manifest his kicking propensity; his appetite was returning, and the mucous tissues were regaining their healthy tint. The excretions were natural.

On the next day the animal's general health had returned.

The seeds of the yew are small oviform bodies, covered with a brownish-green epidermis. The endocarp, which is woody, contains a kernel that has a slightly bitter but not a disagreeable taste, imparting a sense of astringency to the palate. By expression they yield a fixed oil. When bruised, and macerated in water for some hours, and then subjected to distillation, the fluid which passes over into the receiver gives no indications of the existence of hydrocyanic acid by the ordinary tests. I state this, because it has been suggested that this acid may be the cause of the deleterious action of the yew. The leaves having been macerated for many weeks, and the infusion in like manner distilled until one-fourth of the contents of the retort had become condensed in the receiver, was found to be equally free from the presence of hydrocyanic acid. It is, however, sufficiently clear that some powerful narcotic principle is present, which future investigations may develop.

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## ON PARALYSIS OF THE RECTUM.

*By* HARRY DAWS, *Esq.*, *London.*

A BAY gelding seven years old was received into the infirmary. *Symptoms.*—No constitutional disturbance, but a reeling gait of the hind extremities peculiar to broken-backed horses; able, however, to kick spitefully if touched upon the rump. Great tenderness



if pressed above the sacrum. The tail dependent, swinging like a pendulum, and the animal having no power to erect it. The sphincter ani partially relaxed, exposing the fæces contained within it. Occasional straining to void dung or urine, but with little or no effect. A small quantity of urine sometimes dribbling away after an effort to expel it. At other times a small portion of fæces is passed involuntarily, owing to the rectum being enormously distended, and a fresh quantity being forced into the pelvis.

*Cause.*—Supposed to have received a violent blow on the sacrum. I introduced my hand into the rectum, and removed half a bushel of very dry fæces coated with inspissated mucus, emitting an odour very much resembling the chlorine evolved from the ingesta of the stomach. Being a greedy feeder, the greater part of his oats passed through him unmasticated. I found the rectum, at least that part of it which was within the pelvis, incapable of contracting upon its contents. In fact, after I had emptied it, and again introduced my hand, the intestine might be compared to a sack, at no place touching my hand. The sphincter ani remained relaxed, and the air rushed in and out at every inspiration and expiration. The bladder was enormously distended; its fundus reached the umbilicus.

*Treatment.*—Introduction of the catheter and evacuation of the bladder assisted by manual pressure from within the rectum—laxative medicines—enemata—fomentation and stimulants to the sacrum.

*Remarks.*—The bladder did not contract after it had been evacuated, but collapsed and remained flaccid. It, however, gradually recovered some degree of tone in the course of ten days or a fortnight. The rectum also became contracted in caliber, but the sphincter remains in *statu quo*. He is strictly confined to laxative and nutritious food, and he appears to suffer no inconvenience at the present time—March 6, 1839—unless the bowels become constipated.

The anterior edges of his molar teeth had become very sharp, and lacerated his cheeks. They were rasped to a level, which enabled him more easily and perfectly to masticate his food. He is, generally speaking, a very ravenous feeder.

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## MR. EVANS IN REPLY TO MR. BROWN.

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"Let the galled jade wince, our withers are unwrung."

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*To the Editor of "The Veterinarian."*

Sir,—I SHALL feel obliged by your allowing me space, in the next number of your valuable periodical, for the following reply to the statements of Mr. Samuel Brown :—

The truth is, that, when at Croxton Park Races, on Friday, the 22d of March, I was accosted by Mr. Musson, of Colsterworth, who requested me to accompany him to Hose, in order to see a valuable cart mare that had received a wound in her side. Of course, I assented, and, until our arrival near the village was not apprised that Mr. Brown had been communicated with. Mr. Musson then informed me, that Mr. Brown had been sent for on the 19th, but who replied that he could not come that day. He was then requested to see her as soon as possible. He inquired the state of the mare, and the cause of the injury, for which he sent a liniment. He did not go to his patient, who continued to get gradually worse, until the 22d, when the swelling had increased to an immense size, and the mare refused her food. This induced the farming man *again* to send for Mr. Brown, who, on this his first visit, pronounced her in a dangerous state. He dressed the wound, ordered fomentations, and promised to see her again on the 24th. On this being communicated to Mr. Musson, he determined to have my opinion, for which purpose he followed me to the Park.

Under these circumstances I acted as, I believe, every other professional man—not excepting Mr. Samuel Brown—would have done; I accompanied Mr. Musson, and, in order to ascertain the nature of the malady, extracted the tent that had been placed in the wound by Mr. Brown, and found the mare in a very dangerous state. The inflammation surrounding the wound, not having been reduced at the proper time, had run on to gangrene. The sore itself was in a state of sphacelus, and there were symptoms of high constitutional derangement. It was my intention to replace the tent, but, discovering that there was no dressing left, I formed the best liniment I could on the spot; which consisted of two parts of turpentine, one part of olive oil, and half a part of tincture of myrrh.

I made no remark upon the treatment adopted by Mr. Sam. Brown, but advised Mr. Musson to remain at Hose, and, if Mr. B. did not attend early on the following morning, not to neglect sending for him; at the same time expressing my belief that Mr. B. would

treat the case to the best of his knowledge. It was Mr. Musson's wish that I should take charge of the case; but this I declined doing, on the following grounds:—first, that there existed but a slight chance of the mare's recovery; secondly, that I had several important cases to attend to in my own neighbourhood; and, lastly, that it was a delicate point to take a case out of any man's hands, although requested to do so on account of his gross neglect.

It appears that Mr. Samuel Brown does not see any thing unusual or inconsistent in my going to see the case, but complains of my examining the patient; a most grievous offence certainly! But, Mr. Editor, this is not the first time Mr. Samuel Brown has felt his vanity hurt by his employers requesting my professional assistance.

The accusation of having acted discourteously towards Mr. Samuel Brown I repudiate with the contempt which it deserves. What ceremony has he shewn towards me by calling into question my professional character without any cause? Towards him I acted with that spirit of liberality which I should have expected every professional gentleman to have exhibited towards me.

The case which Mr. Samuel Brown wishes to establish against me is, by his own statement, so far satisfactory as fully to exonerate me from the charge of inattention to professional etiquette; for what employer has not the right to change his surgeon if he supposes there is gross neglect, or for the want of confidence in him?

My professional practice is as extensive, respectable, and conducted with as great regularity and observance of etiquette towards my cotemporaries, as Mr. Samuel Brown's, or any other man's; and I challenge Mr. Samuel Brown to prove the contrary. It is not my intention to enter into further controversy with Mr. Samuel Brown; but had I treated his attack with the silent contempt it deserved, I might have been considered, by those who do not know me, as guilty of the impropriety with which he charges me.

I am, Sir, your obedient servant,

JOSEPH EVANS,

Member of the Royal Veterinary College.

Grantham, 13th May, 1839.

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[The charge has been brought, and the defence has been heard. The whole originated in a misunderstanding of circumstances—a misunderstanding which a little further inquiry might and would have rectified. When these gentlemen meet again, there is no reason why they should not cordially extend to each other the right hand of fellowship. Vast improvements are on the eve of taking place in our profession; we shall occupy a higher station

in society, and be more intimately associated with the interest of the agriculturist, and the prosperity of our country. Exulting in the near approach of this consummation devoutly to be wished, let every little personal jealousy subside, and every unprofessional and dishonourable practice be for ever renounced.—Y.]

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### CONSULTATIONS.—No. 3.

#### A SINGULAR DISEASE IN CALVES.

Dear Sir,—As a quondam pupil of University College, although not in the habit of attending your lectures, I trust that you will pardon the liberty which I take in requesting your advice respecting a destructive disease which is now prevailing among calves.

A gentleman of this neighbourhood has lately lost many of his calves with some apparent affection of the head. Hearing of the circumstance, I begged to be allowed to examine one of them after death, and, this morning, I went to him for that purpose.

A fortnight ago, just after the frost, one of the calves was observed to be stupid, and refused his milk—ground his teeth—had some frothing at the mouth,—and died in the night, within twelve hours after it was first noticed. The extremities were below their proper temperature.

A second was attacked on the next day, and died almost as soon. He died in convulsions, having been previously walking round and round in one direction. There was no purging in either of these cases.

A third calf was killed, after being ill fourteen or sixteen hours, and became frantic apparently from the use of cold applications, for, on the wet rags being applied a few minutes, he ran about, and became very furious. In this state he was destroyed. Two others have since died, and two are now ill. They say that the lean calves bear the attack best; but all have died, or been killed, except the two just mentioned. One of these is in a state of coma, with general paralysis, or, rather, stiffness of the limbs, so that he cannot stand. The eyes are turned down, and the vessels much suffused. The other is very slightly affected, but is disposed to *go round*. The extremities are cold, the head not hot, and both of them grind their teeth.

Bleeding was had recourse to in the first cases, but it is said that the patients then appeared to sink more rapidly. Blisters have been applied, and also rowels.

The appearances of the brain I was hardly able to observe, for they had split the head open, and the ventricles consequently were



empty; but I should think that they had not been much distended. The brain itself appeared to be natural; and as I was often in the habit, when a student, of using calves' brains, I can state this with some confidence.

The pia-mater, and arachnoid membranes, however, were much injected, but there was no appearance of lymph. This—a large calf—was killed within twelve hours of the first appearance of the disease, so that perhaps there was little time for lymph to form. I examined the stomach and intestines, and the only thing that struck me was great softness of the mucous coat. The calf had been dead only thirty-six hours, so that I think the softening was more than it ought to have been.

The next calf that dies they will send to me, so that I shall examine it leisurely; and if you will favour me with any hint, I will avail myself gladly of it in the examination of it.

I am, &c. CHARLES LINGEN.

Hereford, March 24, 1839.

They are rearing, *not feeding* calves, but have had some flour and bran. In fact, they have been treated as the owner has been in the habit of doing for fifty years. They are of the same breed, and in the same cots, and nothing resembling this has before occurred.

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#### REPLY.

My dear Sir,—From the misdirection of your letter, there was delay in the delivery of it, and I was from home the greater part of yesterday, or you should have received an earlier reply.

I really know not what answer to send to you. You do not tell me the age of the calves, nor is that very material, for they are yet fed on milk, occasionally having bean-flour and bran. All at once they refuse their food—they grind their teeth—they appear stupid, or occasionally ferocious. While they have the power of motion, they evince a disposition to turn round and round, and always in *one* direction; but, presently, their limbs are paralyzed, or rather stiffened; there is insensibility or perfect coma; and, in from twelve to thirty-six hours, the animal is dead. There is no purging; and bleeding seems to hasten the fatal termination of the disease.

There is evident cerebral affection; but of what kind? There is *compression of the brain* on one side, and probably on one side only—that side of the brain which forms, as it were, the centre of the circle which the poor beast describes. What is the cause of this? If, instead of twenty-four hours, the disease had lasted twenty-four days, I should have said that an hydatid had taken up

its abode between the membranes of the dura and pia-mater: in fact, that it was a case of *turnsick*. But the rapidity with which the malady runs its course precludes this supposition.

The disturbance produced by this compression is soon propagated to the base of the brain and the origin of the spinal cord, and paralysis ensues; or, as you more graphically call it, "stiffness of the limbs," and this accompanied by grinding of the teeth, the usual attendant on this rigidity or an expression of suffering.

You do not mention any thoracic affection, and the only abdominal one is, "a great softness of the mucous coat of the *stomach*," by which I conclude that you mean the abomasum or fourth stomach.

Putting all these things together, I confess that I am very much disposed to look to some affection of the digestive organs as *the source* of the evil. I am not a little "struck"—to use your own expression—with the great softness of the mucous coat of the stomach. I accuse not the milk, supposing it to be pure—nor the bean-flour, nor the bran; but I look to some deleterious agent, and first, and most of all, to LEAD.

There is evidently some occult and temporary cause. Fifty years have passed, and the owner, until the present spring, has not had a similar affection among his calves. I have no idea of its being epidemic or endemic disease. I see none of the varying characters of influenza during life or after death. There is some very different cause of this dreadful mortality.

Has there been any painting about? Could the calves have got to the paint-pots? Has the milk been warmed, or the food prepared, in any empoisoned vessel?

The characters of the disease do not agree with the effect of either arsenic or mercury. *There is no purging*; but there is softening of the stomach. There is likewise spasmodic stricture of the limbs. They are perfectly stiffened. This early tendency to spasmodic stricture well accounts for the irregularity of the venous, or arterial, or lymphatic circulation, and the consequent effusion of some fluid on the brain.

Has there been any fly-powder about, part of which had been used on the sheep during the last year?—Any use of lead ointments, or Goulard's lotion?—Last of all, and I ask it with hesitation, has there been no foul play?

After all, I am perhaps only foolishly speculating; and must ask you to give me some further information about the matter.

But, in the mean time, as to conjectural treatment, blisters and setons are out of the question. Where are they to be applied? If I am at all right in my conjecture, bleeding would do no good; for you find no injection of the vessels of the brain, nor those of the abdominal or thoracic viscera. The effusion on the brain was,

probably, *serous*. By purgatives you could do no harm, and might, *possibly*, do good.

Five minims of the croton oil, with half a pint of castor oil, might be given every six hours, until the bowels were opened; and they might afterwards be kept open by 4 oz. doses of flour of sulphur.

Let these medicines be administered gently, so as, having descended the œsophagus, to pass along the œsophagean canal, and enter the abomasum, and not be poured down bodily, so as to force asunder the pillars of the roof of the rumen, and fall into that viscus, and be lost for all present purpose.

Hoping to hear from you again shortly, I remain, &c.,

W. YOUATT.

March 2, 1839.

## SECOND LETTER.

My dear Sir,—I deemed it most kind that you took such pains with so profitless a case. I thank you. The calf died, and no other has been attacked. I had in *this* case the opportunity of examining the lungs. They were *greatly* congested, but presented no mark of real inflammation, either of the substance or the pleura. The brain, and membranes, and heart, were crammed with black blood, and there was serosity beneath the membranes of the brain—there was no lymph, but the membranes were a little changed in colour and consistence, here and there, particularly at the top of the spinal cord, and at the cerebellum.

The ventricles were not distended; but Mr. A.'s people had again, with stupidity extreme, decapitated the animal. This calf had lived several days after the first attack, and had been, during the greater part of the time, in a state of coma.

The liver and spleen were remarkably bloodless and flabby. The softening of the mucous coat of the intestines was not *so* marked as in the other case; but I have no doubt of its existence.

No lead, or paint, or any poison was suspected. No satisfactory cause of the disease has yet been so much as surmised. I confess that I can make nothing of the case.

I love pathology as a study in man or beast; and, having been elected surgeon to our Infirmary, I have pretty good opportunity for observation. I know that your views, as should be the case with the human and the veterinary surgeon, are of a general and expanded nature; and I shall be most happy to communicate to you and to receive from you any observations that can be useful in our common profession.

I am, &c.

April 6, 1839.

## THE VETERINARIAN, JUNE 1, 1839.

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*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

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### EDINBURGH VETERINARY COLLEGE.

THE annual examination of the candidates for diplomas granted by this valuable institution, now assuming a national importance under the able management of Professor Dick; which qualifies for the practice of veterinary surgery, and now renders its graduates eligible to serve as veterinary surgeons in her Majesty's army, as well as that of the East India Company, took place in the Lecture Room on Thursday and Friday, the 25th and 26th of April, in presence of the members of the Veterinary Committee of the Highland and Agricultural Society of Scotland, under the auspices and patronage of which Society this institution was founded and is conducted. The examination was conducted by Professor Dick, assisted by many of the most eminent medical professors and practitioners of Edinburgh.

The members of the Society's Committee present were—

John Burn Murdoch, Esq. of Gartincuber, Chairman of the Standing Committee of the Veterinary School.

Patrick Small Keir, Esq. of Kinmonth.

John Learmonth, Esq. of Dean.

George Macmikin Torrance, Esq. of Kilsaintninian.

John Inglis, Esq. of Redhall.

William Robertson, Esq. younger, of Kinlochmoidart.

William Aitchison, Esq. younger, of Drummore.

James Graham, Esq. of Leichtown.

John Gordon, Esq. of Cairnbulg.

— Fergusson, Esq. jun. Woodhill.

Henry Stephens, Esq. Editor of the Quarterly Journal of Agriculture.

The members of the medical faculty who assisted in the examinations were—

Sir Charles Bell  
Sir George Ballingall  
Sir William Newbigging  
Professor Graham  
Professor Lizars  
Dr. Borthwick

Dr. Knox  
Dr. Robertson  
Dr. Henderson  
Dr. Handyside  
Mr. Fergusson  
Mr. Burt.



Several veterinary surgeons from different parts of the country attended and assisted throughout the whole of the examinations.

After a searching scrutiny into the knowledge of each candidate, of the comparative anatomy of the domesticated animals, and the practical treatment of the diseases to which each is liable, the following were declared deserving of diplomas :—

Dr. James Fergusson, Lanarkshire.

Mr. James Knight, Renfrewshire.

Mr. Edward Simpson Grey, Edinburgh.

Mr. Robert Olden, sen. Cork.

Mr. John Williamson, Dalkeith.

Mr. Andrew Sherar, Ballantrae.

Mr. William Hepburn, Laurencekirk.

Mr. Robert Mackintosh, M.D. Edinburgh.

Mr. William Mackintosh, surgeon, Edinburgh.

Mr. William Dewar, Midmar.

Mr. Edward Haggard, Hunmanby, Yorkshire.

Mr. John Teviotdale, Elgin.

Mr. Thomas Allen, Perthshire.

Mr. James Bisset, Montrose.

Mr. David Allen, Renfrewshire.

Mr. William Haunsel, Staithes, Whitby.

Mr. Robert Olden, jun. Cork.

The Silver Medal, given every year to the student of the most distinguished merit, was awarded to Mr. Robert Olden, jun. Cork; and that for the best anatomical preparation to Mr. Edward Simpson Grey, of Edinburgh, the preparation displaying the nerves of the ass. Another preparation, exhibiting the bloodvessels of the head of the horse, was declared deserving of a premium, and, accordingly, an extra one was awarded for it to Mr. Edward Haggard, Yorkshire. So important was the subject of anatomical preparations considered, both by the members of the Committee and the medical examiners, as an evidence of the comparative manual dexterity of the veterinary student, that it was determined that, in future, no student should be allowed to become a candidate for a diploma, unless he produced an anatomical preparation executed by his own hand.

The business was concluded by Mr. Murdoch addressing to the graduates a few exhortations on that conduct in life which would ensure to them the confidence of their employers, and elevate the character of the profession which they were about to practise.

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[We have always admired the mode of public examination pursued by Mr. Dick. The close conclave of medical men, compa-

ratively ignorant even of the anatomy and physiology of our domesticated animals, and knowing nothing, practically, of their diseases, is one of the absurdities which ought, long ere this, to have ceased to disgrace the southern school. When, however, the professors of human medicine condescend to honour the public examination of veterinary pupils with their presence, and, associated with "veterinary surgeons from different parts of the country," assist in awarding the prize of merit to the deserving, there is not a man among us, practitioner or student, who, while he exults in the honour conferred on his profession, does not feel his heart overflow with respect and gratitude. These are the examinations, with more or less modification, according to different circumstances, which must eventually be established in both schools.

We admire the attention which is paid to the anatomical acquirements of the surgeon; but we would go somewhat farther than this, and so will all our teachers by and by. We would not only demand the production of a preparation, dissected and completed by the candidate; but, as many heads and hands might have assisted in this affair, we would have the carcass of the animal placed in the centre of the theatre, and we would call on the candidate to cut down on a certain nerve, to expose a certain vessel, or to perform one or more operations, which it would, in after-life, become his duty to attempt on the living animal. This will all come in due time, both in the southern and northern schools.—Y.]

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A public dinner was given to Professor Dick at the close of the examinations, and a valuable piece of plate presented to him. As this proceeding originated with some of the present and former pupils of the Professor, and was carried into effect chiefly by their exertions, it was very properly determined that one of them should preside on this occasion, and another should offer to him their tribute of respect and gratitude. Mr. Olden, senior, of Cork, who had on that day obtained his diploma, was appointed Chairman. He was supported on his right by Mr. Dick, Sir George Ballingall, Mr. Stephens, Dr. Reid, Dr. Henderson, and Mr. Dick, sen.; and on his left, by Mr. Burn Murdock, Professor Lizars, Dr. Robertson, and Dr. Knox. Mr. Mackintosh acted as V. P., supported by Drs. Spittall and Heaviside.

After the usual loyal and constitutional toasts had been disposed of, the Chairman proposed the health of Mr. BURN MURDOCH. His activity in the laborious office which he had undertaken, and the zeal with which he devoted himself to the interests of the veterinary profession, were beyond his praise. There were very many present who were deeply indebted to him, and, through him, to the Highland Society.

*Mr. Burn Murdock* said, that he certainly had no right to find fault where he had already derived much pleasure, otherwise he should have in-

sisted that this toast should not have occupied the first place after those of usual routine. With regard to the part which he had taken in the operations of the class, he could assure them that he had derived from it extreme gratification, and he regarded the institution of the Edinburgh Veterinary School, not only as conferring national honour upon Scotland—though that was not the phrase now—but upon Great Britain. Its utility could only be appreciated by those who recollected how the poor horses were doctored in days of yore. He, although he had never mustered courage enough to stand an examination, had attended two courses of Mr. Dick's lectures. He remembered having been afterwards present at a consultation on the maladies of a horse of one of his tenants. After the practitioner, who was one of the old school, had given up the case, he took to it, and ordered the horse to be led to his stables. He first, however, asked the man what he had given to the horse. "Sir," replied the farrier, with an air of the utmost importance, "that is a profound secret. No mortal man shall get at any of my recipes." He found out, however, that one article consisted of almost two pounds of common salt, with he did not know what beside. By having recourse to bleeding, and a certain course of treatment, for a knowledge of which he was indebted to Professor Dick, the horse recovered, much to his tenant's delight, and to the practitioner's disappointment. He was sure that every one who had had the benefit of attending on Professor Dick's lectures was sensible that he had no secret recipes; but, in fact, simplicity and good sense were more studied than any of the occult sciences.

It would give the members of the Highland Society the greatest pleasure to hear of the proceedings of this forenoon and evening; and he would make a point, at the first meeting of the directors, of giving a full and explicit statement of that which had afforded him so much delight.

*The Chairman* said that he was totally at a loss for proper terms in which to introduce the next toast. It was the health of an illustrious individual—illustrious not by patent, for that descended to the bad as well as to the good, and, after all, consisted in nothing more than a right to a certain name. His friend was illustrious by a higher title—the patent of talent, knowledge, and integrity. He would that he were an orator, that he might introduce this toast in round set terms—in terms worthy of the man; but not being able to accomplish this, he would, in accordance with the fashion of his country, tell them a tale:—The late Dr. Kiernan, of Dublin, one of the most talented men that ever addressed an audience, was once called upon to preach a sermon in behalf of a charity school. He accordingly ascended the pulpit, and, while his audience were in earnest expectation of the commencement of his sermon, the children of the school took their place in front of the pulpit. The Doctor was a most eloquent preacher; but on this occasion he thought that there was a better way of accomplishing his object than even the delivery of one of his most impressive harangues. He therefore took for his text, "He that giveth to the poor lendeth to the Lord;" and he added, "If you like your security, down with your dust." Now, this is my application of the story:—Here is Professor Dick, a man of acknowledged talent, science, and honour. If you think him so, join me in drinking his health in a bumper.

*Professor Dick* begged to return thanks for the honour conferred upon him. He was proud to see so many of his friends assembled on the present occasion, and to find himself supported by so many individuals justly distinguished in the ranks of science. The toast had been introduced by his friend, Mr. Olden, in a singularly facetious manner, and he felt no little awkwardness in endeavouring to reply. He was quite unequal to compete with the peculiar wit and energy of his brethren of the emerald isle. They were so vivacious and so ready, that one could scarcely be prepared for them: but with



whatever humour the toast had been introduced, he felt it as a compliment, and he begged to return his warmest thanks. He was proud to find that his school increased in so rapid and extensive a degree, and still more to know that his pupils were rising in estimation, and were now entitled to assume a standing in society to which, a few years ago, they would not have dared to aspire. He hoped that they would continue to improve in scientific knowledge, and prove themselves worthy of the boon which they had received.

*Dr. Ferguson* now rose, and thus addressed *Mr. Dick* :—

“I am requested by my fellow-students to express to you, Sir, the high sense which they entertain of your noble and patriotic exertions in establishing a school for the promotion of the veterinary art in Scotland. The progress of your institution has realized the most sanguine hopes, and far surpassed general expectation. It still progresses—yearly increasing in its power to effect the most important objects contemplated in its establishment; whilst you, Sir, have the gratification of reflecting, that by you the plan of the institution was first promulgated, and in consequence of your energy and zeal it was finally and triumphantly adopted.

“It may, perhaps, be still more pleasing for you to reflect, that your institution was admitted to be of so valuable a kind as at once to secure the patronage of the Highland and Agricultural Society of Scotland; and that, through the instrumentality of their president, your pupils have now the honour and the right of holding commissions as veterinary surgeons in the army of Great Britain, and in the East India Company’s service.

“The art dates its origin from the most antient times. It was known to and cherished by the Egyptians, the Greeks, and the Romans. It declined in the middle ages, and was, in a manner, extinct; but it at length began to revive, when the severe epidemics that raged on the continent first aroused the different governments, and taught them again to cultivate an art that had once been so useful, and to establish veterinary schools every where. France nobly led the way. The art relating to the horse made great progress in England under Professors Coleman and Sewell; and with respect to the other domesticated animals, we are under much obligation to a gentleman well known to you—*Mr. Youatt*, of the Zoological Society of London; but it was left to the master mind and fostering care of Professor *Dick* to improve “the veterinary art in all its branches”—to cause it to be ranked as a cultivated science, and to make the veterinary surgeon respected in the eyes of the public. Like a delicate plant our art first shot forth: the soil around was arid, and chilling blasts threatened its destruction. You, Sir, shielded it with the mantle of science, and removed every noisome weed from around it. You carefully watched over and nurtured it, and it has grown, and become strong, and borne the richest fruit. To the strenuous exertions made at your institution it is owing that all classes of society are now taught to value the educated veterinarian in preference to the farrier, the cowleech, and the mere pretender. In whatever parts of the world we may roam and observe the blue blanket of Edinburgh unfurled over our heads, it will put us in mind that we once had the honour of being pupils of Professor *Dick*, and it will stimulate us to the more ardent study of our profession. I have witnessed with unfeigned satisfaction, during my attendance on your lectures, the able and energetic manner in which you have invariably delivered your instructions on the different branches connected with the veterinary art, and the never-failing impressions they made on the mind.

“There are several works on veterinary science, but, in my mind, they are not all that we could wish them to be, nor in every respect worthy of the art which they pretend to elucidate. They are not fully worthy of your institution. If, Gentlemen, we could induce our excellent Professor to give us, ere



long, a work of his own on the Anatomy, Physiology, and Diseases of the Horse and Cattle, he would leave behind him a name that would never perish from among us.

"I would now beg leave to say, that, from the instant we proposed to offer you this feeble testimonial of our esteem, the list of the subscribers was, in fact, a list of your pupils. It embraced them all. It included not only the junior students, who, although just introduced to you this session, had experienced enough of you to appreciate your talents and your kindness, but those who have had the honour and happiness of knowing you still longer, and whose judgment of you will be sanctioned and applauded as long as our art exists.

"I wish, Sir, that it had fallen into much abler hands to have presented you with this testimonial. It is a sincere tribute of our respect. I regret that my humble abilities have not done justice to my subject, or to the feelings of those I have the honour to represent; but trust that they will pardon me, although I have not conveyed to you, in language sufficiently impressive, the warm and genuine sentiments of their minds."

*Professor Dick* rose and said that he never felt more difficulty in addressing any assembly than on the present occasion, when he was called upon to return thanks for the honour that had been conferred upon him. He looked back with deep and intense interest to the time when he was a veterinary pupil. He had difficulties before him which he then thought it was scarcely possible to overcome—difficulties arising from the circumstance that there was no one in Edinburgh at that time to afford him scientific instruction, or to direct him in the right path in which to pursue his studies.

It happened, however, on his being introduced to hear a lecture from the worthy predecessor of his friend Dr. Knox, the late Dr. Barclay, that he was struck with the simplicity of that gentleman's illustrations, and the clearness of his demonstrations; and he thought it surprising that the veterinary art should have been neglected, while such illustrations were to be heard, and where its professors had access to such advantages.

He had attended only a very few of these lectures, being then but a boy, ere he thought it possible that the time might come when he also would try to lecture. He formed to himself a resolution of this kind, which some might deem presumptuous, but which those whose approbation he valued would not only forgive, but approve; still there were difficulties in the way not easily to be overcome. He determined, however, quietly and steadily, to obviate them; and, after attending for some time on the lectures of the most eminent men which the Edinburgh Medical School contained, he felt more resolved to endeavour to rival them as early as possible. Still, actuated by this feeling, he proceeded to London, and, after residing there for a short time, diligently attentive to every passing event, and finding that it was possible to derive as much knowledge in Edinburgh as would lay the foundation for the successful working out of the scheme which he intently cherished in his mind, he considered that it was not necessary to remain longer in the English metropolis. After three months' study there, he had the confidence to apply for a diploma, the time of residence not being then defined; and he obtained it, yet not without certain sneers about his being a vulgar Scotchman.

An opportunity soon afterwards occurred of his attempting to lecture, by the establishment of an institution in Edinburgh, something like the present School of Arts. That school, however, soon afterwards failed; but, having once begun to lecture, he was determined to go on.

Unfortunately for him, he had not a single pupil during the first year. In the next year he had four pupils, with regard to whom, as the object of his heart was to establish a class, the fee was limited to a guinea each.

In the next year he had nine pupils.

In the year after that, the School of Arts was established, and he then thought that if any of the arts needed cultivation and improvement, it was that which he had been accustomed to teach, and he therefore offered his services to give a course of lectures on that subject. This offer was accepted, and he had a numerous class in that and the following year. At length, as he could not afford to be always lecturing for nothing, he thought he would try once more what he could do on his own account. The Highland Society then took him up; and of the success which their patronage and encouragement had procured for him the present meeting was quite aware.

It was a cheering fact, that the number of his pupils continued steadily to increase every year, even to the close of the last session, and which had terminated with a class of 101!

He must acknowledge that he had been far better rewarded than he could have expected to have been, even after twenty years' experience. He little anticipated that, at the conclusion of this session, besides the other rewards arising from the success of the school, he should have received this tribute of respect from them. He assured them that he highly appreciated this token of their esteem; and he trusted that he should never forget the circumstances of that day. Although his school already consisted of double the number he had ever expected, still it seemed as if its prosperity would continue to increase; and, if he was aided by the energy, the attention, and the perseverance of his pupils—by their steady straightforward conduct, and their sobriety and attention to the interests of their profession, he could assure them that success was certain; and that the prospects of the Veterinary School of Edinburgh would continue to increase.

He begged again to thank them, and to assure them of his warmest wishes for their prosperity; and to repeat what he had often said, and ever tried to perform,—that if he could forward their views, if his counsel could be of service in any dubious case, if he could assist them in any way in his power; they had only to ask and to have (*cheers*). Nothing would give him greater pleasure than to think that he was able to be of service to those whom he had often seen in his lecture room—whose presence and attention had always afforded him delight, and on whose improvement and good conduct his success had been founded. He once more thanked them for the high compliment which had been paid to him; but he was unable to express one half of what he felt.

The testimonial, which was then presented to him, consisted of a splendid silver salad stand, the base consisting of three sides—one of them representing, in chased silver, the horse, another the ox, and on the third was the following inscription:—

“PRESENTED TO PROFESSOR DICK, FOUNDER OF THE EDINBURGH VETERINARY COLLEGE, BY A NUMBER OF HIS PUPILS, TO TESTIFY THEIR HIGH SENSE OF HIS SCIENTIFIC MERITS, HIS PUBLIC SPIRIT, AND HIS PRIVATE WORTH; AS, ALSO, IN TOKEN OF THEIR HEARTFELT GRATITUDE FOR THE DEEP INTEREST HE HAS EVER TAKEN IN THEIR INDIVIDUAL WELFARE, NOT ONLY AS REGARDS THEIR PROFESSIONAL ACQUIREMENTS, BUT LIKEWISE IN RESPECT OF THEIR ESTABLISHMENT IN AFTER-LIFE.—1839.”

The Chairman then proposed “The University of Edinburgh, and the health of Sir George Ballingall.”

Sir George Ballingall said he felt himself again in the situation in which he had too often stood, of representing the College to which he belonged. He regretted that he was not gifted with the eloquence of several of his colleagues, in order better to return thanks for the honour which had been paid to them;

but he yielded to no one of his colleagues in zeal for the promotion of the interests of the institution, nor would he yield to any of them in his zeal for the interests of the veterinary school.

*The Chairman* then proposed the healths of Drs. Henderson, Spittal, &c. and the Royal College of Physicians.

*Dr. Henderson*, in the name of his colleagues, begged to return thanks for the honour which had been conferred upon them. He would take that opportunity of addressing a few words to the pupils, and to tell them a little of what they owed to Mr. Dick. Although not very old, he well recollected when the students of the Veterinary College were an altogether different set of persons from what they now were. They owed their present situation to the science and zeal of Mr. Dick. It was he who had acquired for them that degree of respect in which the students of the veterinary art were now held. It was in consequence of the attention which Mr. Dick had paid to the subject, and to the talents which he had brought to bear upon it, that the students of the Veterinary College were placed on a level with those of the sister art of the practice of medicine.

*The Chairman* then proposed Professor Lizars, and the Royal College of Surgeons.

*Professor Lizars* returned thanks, and said that the College of Surgeons, in proportion to their numbers, were not behind the physicians in wishing well to and aiding the progress of the veterinary art.

*Mr. Dick* said he was sure they would all cordially join him in the bumper he was about to propose, because it was to the health of gentlemen who had kindly contributed, in the most essential manner, to the prosperity of his class. He need scarcely say, that if it had not been for the kindness which these gentlemen had conferred upon him and his pupils, by allowing them to attend their lectures on medicine and anatomy, it would have been impossible for him to bring them up to the scratch on the day of examination. Time would not permit it—their most decided perseverance could not accomplish it—their utmost energies would not have overcome the difficulties which stood in their way, if it were not for the advantages afforded them by the opportunity of attending the lectures of Dr. Knox, Dr. Robertson, Dr. Handyside, Dr. Spittal, Dr. Henderson, Dr. Reid, and other gentlemen of the medical school. He considered that these were advantages which no other men enjoyed in the gratuitous instruction which these gentlemen afforded. Such being the degree of their liberality, and their kindly feeling to his humble profession, he was sure they would all join him in the most cordial and heartfelt manner, in drinking a bumper to their health. Let them recollect the position to which he had alluded, and see these gentlemen contributing all their talent and energy to raise the status of the veterinary students, and he was sure it would not be necessary for him to do more than to mention the names of these gentlemen, who he was perfectly assured would avail themselves of every opportunity to promote the welfare of the students in after-life.

*Dr. Knox* said, that after the compliment paid to him and his brethren by Mr. Dick, he feared it was expected that he should say a few words. He apprehended that Mr. Dick had had the kindness to put his name prominently forward, because he had been the first teacher to open his class to the veterinary students. He recollected well the time when he succeeded the late Dr. Barclay, and resolved to open his course of lectures to the veterinary school. Although his class-room was crowded at the time, he told Mr. Dick at once that he saw no reason why they should not be put on a level with the medical pupils. He had, therefore, given them access to every kind of instruction which he was able to afford them. He apprehended that this was doing something for them. They were enabled to climb by an easier road



the path which Mr. Dick had to ascend by his unaided efforts. He therefore thought that no greater kindness could be done to those young persons than to put them on the same footing with his own students—to say to them, “Come forward, you shall find no distinction here:” and then, if they did not mount to the same status with the medical profession, the fault lay with themselves. He had been rewarded by seeing a great increase of knowledge in the veterinary school; and, without pointing out names, he might state that he had seen among them men of a firm grasp of thought, and able to follow the steps of the reasoning in Mr. Dick’s lectures, and that was saying a great deal. Although Mr. Dick had over-rated what he and his friends had done for the veterinary school! (*No, no*), still they would permit him to say, that, after all, his opinion was, that the life and soul of the Veterinary College, the sun and moon, he might say, of the institution, were Mr. Burn Murdoch and Mr. Dick. These were the central points of their system. They could not imagine the gratitude they all owed to Mr. Murdoch for the trouble he had taken; and for persisting in interesting himself in their welfare, and in forwarding the prosperity of the school year after year. Of the scientific attainments of Mr. Dick, he would say that they were such that the highest society in Great Britain would be glad to have him as an associate; and there was not an institution in the world—not even the Academy of Sciences in France—which would not be happy to rank him among their members. This, however, was a peculiar and accidental circumstance, that might never happen again. Though the Veterinary School should continue to the year 1939, as he hoped it would, it might never again occur that they would have a man placed at their head who was so fond of his art, and who was never dead to a scientific hint, come from what quarter it might. He begged again to return thanks in the name of himself and his associates, who all felt equally interested in their welfare. He claimed no merit for himself, except that he was somewhat older than his brethren; and so had the accidental merit of being the first to open his classes to the veterinary pupils.

*Mr. Burn Murdoch* reminded the meeting, that they ought not to forget old friends. They had heard a great deal of the interest which people took in the Veterinary School; and among these, certainly the most prominent was the gentleman who was his predecessor in the convenership of the Highland Society’s Committee, and who had greatly exerted himself to forward the interests of the School. The Professor would permit him to say, that a great deal was owing to the penetration of that gentleman, not in discovering—for they would have been discovered at any rate—but in *early* discovering the latent merits of Professor Dick (*cheers*); and he must say, that when he was a private member of the committee, which his friend, the Hon. Adam Fergusson, conducted, he had many opportunities of seeing the interest which he took in the establishment of the school. He was satisfied that the least they could do, in honour and in gratitude, was to dedicate a bumper to his health. He had only to add, that as Mr. Fergusson’s son was at present in this county, he had written to him to attend the examination, that he might make a special report of the proceedings to his father, and he had no doubt that he would give a good account of them—“The Hon. Adam Fergusson.”

*The Croupier* said he was about to propose the health of a distinguished individual. They had talked a great deal about the Highland Society, as well as the medical gentlemen who had assisted Mr. Dick; but he was about to propose the health of the individual who had conducted the education of that gentleman, and had made him what they all admired. He begged to propose the health of Mr. Dick, senior.

*Mr. Dick, sen.* returned thanks to his worthy friend for proposing his health. He wished to remind his young friends around him of the obligations



and the honour which had been conferred on them by the Highland Society and the medical gentlemen of the University. He hoped that they would make it the business of their future lives not to dishonour those who had conferred honour on them. If they did so, they might depend upon it that they would be generally despised. He would say to them particularly, that they ought not to mingle with low associates. They should have pride, with plenty of prudence. If they had pride without prudence, they would then be less thought of. He would say one word more. They should not haste to be too soon rich; but when they were brought in contact with the old woman's cow, or the old man's mare, they should not think to make a fortune out of them. He had always been proud to attend to the cattle of the poor. If the poor man's horse was cured, he thought himself better paid than if it had been the horse of a gentleman. He would also advise them to lead sober and steady lives, and to exert themselves, to the utmost of their abilities, to bring their profession to greater perfection than it had yet attained. He returned them many thanks, and wished them every success. May they always have a stout and a kind heart, and a steady hand to perform their operations! (*Loud cheers.*)

*Dr. Robertson* said, that a toast of a very pleasing character had been put into his hands;—it was the health and prosperity of the gentlemen who composed the Veterinary School. In the medical and the veterinary arts, the students were nearly upon the same level. The veterinary students had access to the same classes with the medical; and they had the farther advantage of the instruction of *Mr. Dick*, which the others had not. The point of difference between them at present was, that the one party attended those classes four sessions, and the others only two. He hoped the time was coming, when, from the estimation in which the art was held, the veterinary students would be able to devote a greater portion of time to their education, looking forward to an increased emolument and respect as their reward. Perhaps, also, their studies might be pursued in a more regular manner than at present, so that, instead of attending more classes, they might profit more by those within their grasp.

There was another point he wished to press on the veterinary students. The teachers had opened their doors to every student who chose to enter them; and it was but fair that they should receive in return the highest compliment which students could pay,—regular and respectful attendance (*cheers*). He threw out these hints in consequence of a slight variation he had made from his former practice with the veterinary students. He had taken the liberty, for the last two sessions, of including their names in the list of his class (*cheers*); and he called their names, marking them regular or irregular according to their attendance, and he gave them certificates accordingly. He was anxious that his excellent and talented friend, *Mr. Dick*, should adopt the same principle, and call the roll, for they all knew it was impossible to put old heads upon young shoulders; and whatever the students might think of it when in the class, he was sure that, when they came for their diplomas, they would say, "We are now glad that you called the roll, and compelled us to attend." One thing he could say, that he had never had a single complaint to make against the pupils of the Veterinary School for want of gentlemanly conduct, or for any thing whatever; and he therefore cheerfully dedicated this bumper to "The Members of the Veterinary School."

*The Croupier* returned thanks in the name of the students; and proposed "The Veterinary School of London, and *Mr. Coleman*."

*Mr. Dick* returned thanks in the name of Professor Coleman, and as a pupil of that school.

*Mr. Stephens* begged to propose a toast, which he was sure they would all

accept with the utmost cordiality,—“The health of their respected Chairman.” Every gentleman present would appreciate the kindness and attention which he had shewn to them on the present occasion.

*The Chairman* rose to reply to the honour which had been conferred upon him; but he was sure that he could not do justice to his own feelings. When he found himself associated with the first medical and surgical professors of Scotland, he wondered at himself, a poor humble individual, a member of the despised isle (*No, no*). No: he did not feel himself despised in the present company; but his countrymen were more or less despised. He had been often in Edinburgh, and the kindness which he had experienced on every occasion had implanted in his bosom a respect and affection for the place which he should never forget. Above all, he should never forget this evening.

“The health of Miss Dick and the Ladies” was then proposed.

*Mr. Dick* returned thanks in the name of his sister. He could assure them that she took a deep interest in the welfare of his pupils, and that nothing gratified her more than to hear of their prosperity in after-life.

*Mr. Horsburgh* said, that though not the oldest of *Mr. Dick's* pupils, yet he was one of those who had attended his class for the greatest length of time. He wished to say that he had derived more benefit from *Mr. Dick's* lectures than most of the gentlemen present could appreciate. He had been brought up in the errors and superstitions of the old farriers; but he thought he should be the better from attaining some acquaintance with the subject as a science; and, though he resided at that time full twelve miles from Edinburgh, he came that distance regularly on foot, going and returning the same night. After he had attended these lectures, he found himself better able to practise—he gave his mind to advance in the science—he became a regular student, and he obtained a diploma and a prize. He had since practised as a regular veterinary student at Dalkeith:

And now he found he had no cause to rue—

He had left the old system, and begun the new.

He begged to give “The Veterinary College of Edinburgh” (*cheers*).

*Mr. Burn Murdoch* said they had been called, by the gentleman who spoke last, to drink to the success of the Institution of which they were all members. There were other means by which science found its way into the country. He did not allude to the publications directly connected with science, but to a work connected with all subjects relating to scientific agriculture—to the welfare of the horse and the cow, as well as to the cultivation of the soil, and the editor of which publication was now present;—he meant the *Quarterly Journal of Agriculture*, in which they would find a mass of information on every subject connected with agriculture, and which no one could read without benefit. He might add, that *Mr. Stephens*, during the last two days, had given his undivided attention to the examination of the students. When they considered the importance of the dissemination of knowledge, and the many journals which spread over the country principles the reverse of sound and enlightened—for if they read these publications they would be astonished at the ignorance displayed in them—they would then understand the benefits of a journal like this. He trusted, therefore, that they would all join in a cordial bumper to “*Mr. Stephens*, and success to the *Quarterly Journal of Agriculture*.”

*Mr. Stephens* returned thanks for the manner in which his friend *Mr. Murdoch* had introduced the toast, and to the company for the way in which they had received it. He was also grateful for having his name associated with the publication of which *Mr. Murdoch* had said so much, and he hoped justly. If, through any exertion of his, that publication was rendered acceptable to the

agricultural interest of the community, and to the class of gentlemen whom he addressed, it would ever be his proudest reflection. At the same time he thought there had been a slight omission made by Mr. Murdoch in alluding to this publication; for it not only contained the Quarterly Journal of Agriculture, but also the prize essays of the Highland Society of Scotland; and he did not hesitate to say, that to the patronage of this Society the publication in a great measure owed the good opinion which had been so universally expressed with regard to it. He begged again to return thanks: before he sat down he would propose a toast which required no preface,—“Mr. Youatt, and his Co-editors of *THE VETERINARIAN*.”

*Mr. Dick*, as one of the Co-editors of *THE VETERINARIAN*, although only nominally so, begged to return his cordial thanks for the manner in which the last toast had been drunk. Had it not been for very peculiar circumstances connected with the Zoological Society of London, of whose menagerie he had the medical care, the Editor of *THE VETERINARIAN* would have been among them to-day. *Mr. Youatt* had hourly expected the *accouchement* of the female giraffe, a circumstance which was not upon record as having taken place in any civilized country; and from which, considering the value of these animals, and the interest felt respecting them, both by the Society and the public at large, he dared not to be absent. He regretted that *Mr. Youatt* had not been among them. These were the first examinations that had taken place since the students of the Edinburgh College had been placed on a level with those of the southern school, with regard to commissions in the army and the East India Company's service. The presence of this gentleman, who had, again and again, warmly advocated the equal claims of both schools, would have been highly gratifying; and this only was wanting to give full *eclat* to the present meeting\*.

At the same time he might state, that one of the old London examiners had been present, and he would propose “Sir Charles Bell, and the other examiners;” and he was proud to say, that Sir Charles did not think that there was any disparity in the Edinburgh, as compared with the London school, for he had observed to him, as he left the school, that he always learned something wherever he went. (*Cheers.*)

*The Chairman* now retired, having to depart by the Irish mail. His place was supplied by *Mr. Wm. Mackintosh*.

*The Chairman* proposed “Mrs. Olden, the mother of eighteen children.”

*Mr. Shields* begged to propose a toast. The proceedings of yesterday and to-day had afforded him much gratification. He had sailed many a league in order to witness this examination, and he would willingly travel double the distance to be present at such another glorious, heart-stirring scene. His young friends must not, however, always expect fair weather. He compared them to vessels newly launched upon the waters. Some would steer their course towards the haven where dwelt the friends they loved; others, perhaps, would drift for awhile with the wind and the tide. All of them, pro-

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\* The Editor of *THE VETERINARIAN* expresses his warmest acknowledgments to Professor Dick for the kind and true explanation which that gentleman has given of his unavoidable absence from this interesting meeting. He has advocated “the equal claims of both schools,” and he has no doubt that, when fresh arrangements are made,—and this soon must be,—that will take place which reason and honour alike demand. The examination with regard to the competency of the candidate will no longer rest with any gentleman belonging to, and identified with, the interests of either school; but with some senior and competent veterinary surgeon, whose sole object will be the good of the service.—Y.



bably, would have storms to encounter; and pirates, under the names of quacks and ignorant pretenders, would cross their track, or, perchance, endeavour to run them down. But let them hold on their way. Their hearts tough and stout as the oak of their bark, and the compass of honour and honesty ever their guide, he was sure, from what he had seen of them yesterday and to-day, that he should hear of them all again, worthy of the name they had borne, and the cause they had espoused. He would beg to propose the healths of them all.

*The Croupier* returned thanks for the too flattering compliments which had been bestowed upon them.

*Mr. Dick* said, there was a toast which had been too long overlooked,—“The health of Professor Low, and prosperity to agriculture.” He begged to state, that the learned Professor would have been present, had he not been unavoidably detained in the country.

*Mr. Burn Murdoch* then proposed—“Good night,” and the company separated, having spent the evening in the utmost harmony and cordiality.

## REVIEW.

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Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.  
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*A Register of Experiments, Anatomical, Physiological, and Pathological, performed on living Animals, by JAMES TURNER.*  
Longman and Co.

OUR ever active and highly valued friend is again in the field. In his early days at the Veterinary College he imbibed the doctrines, “the great fundamental principles regarding the blood;” which it were heresy then to doubt. He believed, in common with every student of human and of veterinary medicine, in the identity of muscular contraction and fibrinous coagulation—he not only traced the influence of the blood on every part, but he regarded it as an organized living body, and the peculiar seat in which the vitality of the whole system resided. In riper years, however, although he still adhered to the grand principles of his great master, yet he began first to doubt the legitimacy of the conclusions which were drawn from certain experiments, he objected to the manner in which some of the experiments were conducted. By degrees he began to question the soundness even of the principles themselves, and to fall back into the ranks of the older physiologists, and again caught a glimpse of the more subtle fluid, which these philosophers of other days used to imagine that they saw traversing the various vessels—“the bright red, thin and transparent vapour—the *blood steam*,” which is productive of so many important effects in the animal economy. Many slow thinkers and timid reasoners, of which the writer of the present



review is one, doubting, with our friend, the legitimacy of all the Hunterian theories, and unable to trace any necessary connexion between the coagulation and the vitality of the blood, and unable also to see more in *the blood steam* than a halitus or gas, which uniformly, *necessarily*, arises from a warm fluid surrounded by a colder one, may hesitate to acknowledge that, with regard to this gas or steam, "the present generation of philosophers are doomed to the humiliating task of retracing the steps of the ancients, upon more important points than one vitally connected with the animal economy."

The present work is confined to an examination of the contents of the arterial vessels. The subject is very ingeniously treated, and the experiments are judiciously selected. We will give a sketch of one of them. Hunter had frequently laid bare the carotid artery of animals for about two inches in length. He then tied a thread round it at each end, leaving this space of two inches in length between each ligature, filled with blood. The external wound was loosely stitched up. Several hours afterwards, he opened the stitches, and found that the blood was coagulated, and of a dark colour, the same as in a vein.

Mr. Turner contrived an instrument, by means of which he suddenly seizes an inch and a half of the carotid artery of a living animal, so as to cause an instantaneous imprisonment of its contents in their transit. The isolation of the arterial trunk and its contents is made in a moment. This portion is cut out with a pair of scissors, and placed in a medium temperature for three hours, in order that the blood may die, if die it will.

At the end of four hours he opens the vessel; and what does he find?—Not the coagulation which Hunter was accustomed to see; but a fluid "of a bright scarlet colour, and of remarkable tenuity, and instantly separating into two distinct parts, red particles—he does not say globules—and a transparent liquid, thin and almost colourless, exactly resembling condensed vapour. No fibrine in solution, or held in suspension,—no jellying,—no solidification,—not a particle would adhere to a pin's point, or even to its head." In another place he asks, What is this? "Is it blood? I do not know. It appears to the eye like condensed steam or vapour, of a bright red hue, but exceedingly thin and transparent. The colouring particles gravitate, and a limpid fluid floats on them. Not a particle of coagulum is to be seen nor detected hours afterwards. The red particles adhere tenaciously to the dish, but the delicate fluid evaporates rather quickly."

"To account for this difference in the results of the two operations, physiologically, in all their bearings, would," says the author, "be no easy task. For my own part, I shall not pretend to it

until I have been enlightened, by adopting the same course of exploration through the venous system as that which I have just described with the arterial."

We will pursue the same cautious procedure, and refrain from hazarding any farther remark until we have seen the account of Mr. Turner's experiments on the veins; but, in the mean time, we cordially recommend this little book to the perusal of our readers. It is perfectly characteristic of the author: and those who know him would recognize at once the ardour—perfectly his own—with which he throws himself into every subject, and would almost fancy that they saw him in *propria personâ*.

There is one passage, however, in this work against which we do enter our most decided protest. "If we turn," says the author, p. 35, "to our neighbours on the Continent, we find that indefatigable French philosopher, Magendie, absolutely absorbed by the subject. See his invaluable lectures in the *Lancet*. This model of a teacher of animal organization, who wisely rejects every theory which is found to quail under the test of experimental enquiry"!

Now, what does "this model of a teacher" (!)—"absolutely absorbed by his subject" (!!)—what does he do? Why he delivers, annually, a course of lectures on certain physiological points,—*points, many of them more of curiosity than of utility*,—and, in more than one of these lectures, he destroys, with every kind of torture, no fewer than a dozen poor brutes, possibly as susceptible of pain as himself; and then, covered with their blood, he turns to his audience, and says, with a sneer, "there are those who turn with disgust from these pursuits, because they are equally incapable of employing or appreciating them." (!! ) And is this Mr. Turner's model of a teacher?

Our friend—for we know him well—will be the first to recall this slip of the pen; for, in the opinion of every one who has a human heart—and of every one who has common sense—there never was a man who has added so little to the possessions of science, in proportion to the cost of its character, as Magendie has done. He has brought down odium on the whole profession of scientific medicine, and the boons he has obtained for it are in no degree commensurate with this injury\*.

Y.

\* See London Medical Gazette, May 4, 1839, p. 215.

*The Animal Creation, its Claims on our Humanity, stated and enforced.* Prize Essay, by the Rev. JOHN STYLES, D.D.

*The Obligation and Extent of Humanity to Brutes, principally considered with reference to Domesticated Animals.* By W. YOUATT.

HUMANITY is certainly on the advance, and the prejudices against any systematic attempt to ameliorate the condition of animals is fast wearing away; so that the claims of the animal creation now require only to be fairly explained and enforced, in order to be generally and practically acknowledged. This was not the case formerly. Even at no very distant period the right of wantonly torturing the inferior animals, as caprice or passion dictated, was unblushingly claimed; and it was actually asserted, that the prevention of this was an interference with the rights and liberties of man. This change in the opinions of our countrymen may be, in a great measure, attributed to the different societies that have nobly and humanely come forward, and asserted the rights of the inferior animals to kind treatment. The most powerful and influential of these is the one entitled "*The Society for the Prevention of Cruelty to Animals.*" Since its establishment in 1824, it has been zealously and successfully employed in promoting the benevolent designs of its founders, by calling on the ministers of religion to advocate its cause, both in Great Britain and Ireland—by enforcing legislative enactments; and restraining by the arm of authority the cruelty of those who would not listen to the persuasive voice of mercy.

The committee of this valuable society lately proposed a prize of *One Hundred Pounds* for the best Essay on "THE OBLIGATIONS OF HUMANITY AS DUE TO THE BRUTE CREATION." As might have been expected, there were numerous competitors. No fewer than *thirty-four Essays* were presented, and the prize was eventually awarded to the Rev. John Styles, D.D.

It is our intention to review this prize essay in connexion with one of the *rejected ones*—that of Mr. Youatt; and, in order to give both parties fair play, we will place before our readers some extracts bearing on the same points from both the publications, and thereby enable them to form a just criterion of each.

The Reverend Author sets out by quoting a passage of Dr. Chalmers, which proves, that "beasts are not to be considered as mere automata, without sensation, and just so constructed as to give forth all the natural signs and expressions of it: but they exhibit, in a degree, the same feelings and sensations as ourselves. They put on the same aspect of terror on the demonstrations of a

menaced blow. They exhibit the same distortions of agony after the infliction of it. The bruise, or the burn, or the fracture, or the deep incision, or the fierce encounter with one of equal or superior strength, just affects them similarly to ourselves. Their blood circulates as ours; they have pulsations in various parts of the body, like ours; they sicken, and they grow feeble with age, and finally they die, just as we do. They possess the same feeling, and, what exposes them to like suffering from another quarter, they possess the same instinct with our own species. The lioness robbed of her whelps causes the wilderness to ring aloud with the proclamations of her wrongs; or the bird whose little household has been stolen, fills and saddens all the grove with melodies of the deepest pathos. All this is palpable to the general and unlearned eye; and when the physiologist lays open the recesses of their system, by means of that scalpel under whose operation they just shrink and are convulsed as any living subject of our own species, there stands forth to view the same sentient apparatus, and furnished with the same conductors for the transmission of feeling to every minutest pore upon the surface." This passage is most truly eloquent, and Dr. Styles has shewn his judgment in selecting it as the foundation, and, in fact, the sum and substance of his Essay.

There is no writer who has so eloquently and powerfully written on this part of the subject as Mr. Youatt. After alluding to the usefulness and good qualities of the inferior animals generally, he confines himself more particularly to the domesticated animals which surround us. He then describes the beautiful adaptation of each to the precise situation which he occupies—shews the many common points among them—that "each has a heart to circulate the blood through the veins, and lungs to purify and fit it for the purposes of life. Each has a brain and nerves of various systems connected with the intellect of the animal, or with the general functions of life." It is impossible in a paper of this kind to follow out this author in any portion of his work bearing on the subject. He takes a firm and sure ground at the very commencement, by asserting that

"All are but parts of one stupendous whole."

"Each is independent of the others, and yet linked with his fellows—each possesses memory and reason—each is capable of acquiring knowledge from experience, and of devising means for the accomplishment of particular ends—each is perfect in the station in which he is placed, and, possessing this degree of knowledge, perfect so far as that animal is concerned; consequently he has a claim on our kindness, and deserves not ill usage and cruelty. Every animal—the horse, the dog, the ox, the sheep, the wasp, and the bee—is perfect in its kind; and there are certain faculties



belonging to each of them which would laugh our boasted intellect to scorn."

"They are perfect," he says, "*but it is only in the little part allotted to them.* They are now, seemingly, what they were at first. There are evidently boundaries assigned to them which they have never yet passed, or were intended to pass. Their's is a different kind of knowledge from ours, and therefore we need not be jealous of it. In grasp of comprehension, in extent of reasoning, we leave them all at an immeasurable distance. We alone can, to any efficient purpose, extend our views beyond one narrow compartment, or, in fact, beyond the confines of the globe and the limits of time." "I am not," says the author, "impugning the superiority of man, but I am claiming kind consideration and uniform good treatment for the brute."

Mr. Y. then passes on to another division of his subject—"the Moral Qualities of Brutes." This part is beautifully displayed by numerous interesting anecdotes, shewing that the social affections are as necessary in the little republics of the brutes as among any of the associations of men—that they are the cement which binds together the different parts of the fabric. These social affections are commonly designated *Instincts*. "We care not for that," says Mr. Y. "These instincts or propensities are the foundation of every virtue in the human being; and in the quadruped they cannot escape our regard and admiration. The parental affection, the hallowed basis of the whole!—let it be instinct! What character is so attractive as the wisely indulgent father—the devoted mother? Is it instinct only in the brute, and associated with every virtue in the human being? It is instinct and virtue in both."

In a Review of Mr. Youatt's Essay, published in "The Advocate of Humanity," the writer sneers at the idea, that "the habits and instincts of brutes should be designated as moral qualities, and described as filial affections and conjugal attachment."

This gentleman evidently knows very little of the principles and phraseology of moral philosophy, and is as ignorant of the real foundation on which it rests as he seems to be of the duties and rights of a reviewer. "In brutes we have many pleasing instances of the existence of such attachments. It is true, that, when the animal is taken from the scenes and connexions on account of which its natural propensities and restraints were given to it, it becomes a perfectly altered creature. All our domesticated animals are changed to a greater or less degree; and, with regard to a considerable number of them, we must confess that they are debased by their connexion with us, for we look in vain for many of the social virtues that exist in them in a state of nature.

"In almost every species of wild animals, and in some of the tame ones, where they have not been too much mixed up with

those whom domestication has corrupted, the pairing is for life; these attachments are mutual and strong, and shewn in a thousand endearing ways, while infidelity and ingratitude are rarely known, or else summarily punished." Mr. Youatt has given us many pleasing anecdotes illustrating these moral affections, all tending to prove that the inferior animals have passions, feelings, and sensibilities and virtues, as well as the lordly creature man;—that they have the conjugal, the parental and friendly affections strong and indomitable, even in torture and death. They are grateful to their benefactor; and some of them, as the dog, would encounter every danger in his defence.

We pass on to another portion of the successful Essay—"The Sports of the Field." "Making life," says Dr. Styles, "the sacrifice of mere amusement, and destroying unoffending and happy creatures without any higher motive, may be considered as indicating the first transition from a state of barbarism to a state of partial civilization." Again: "It is civilized man who has appropriated to himself a certain portion of the earth as his domain—who is surrounded with luxury—who fears no invasion from ferocious animals, and whose are the quiet cattle browsing on a thousand hills;—it is man, civilized, who looks with proud contempt on his savage brother of the woods,—it is he who determines not only that the stag shall die, but that it shall die in his presence, and for his amusement; it is he who pursues with inhuman delight the most timid creature that gambols in our fields:—yes; they are not savages, but civilized men, who, with a troop of dogs and horses, as if in pursuit of some mighty depredator, some fearful obnoxious beast, that had been devouring our flocks or scouring our hamlets, are hunting to death a poor little animal whose life one of their fair wives or daughters might crush with the pressure of her delicate hand."

After this prefatory declamation on hunting, not forgetting to have a hit by the way on *hunting clergymen*, he favours his readers with some instances of the barbarous effects of this favourite pastime of joyous Old England, taken, he says, at random, from the newspapers; manufacturing from this authentic source a perfect *pot-pourri* of blood and murder.

He says also that the training of hounds for the chase is accompanied by many cruelties to the hounds themselves, as well as to other creatures, in order to reduce them to perfect obedience. "*They must be severely lashed, and initiated to their office by various barbarous rites.*" The young hounds are first made to follow a *cat*, which is dragged along the ground for a mile or two; at the end of which a *badger* is turned out, first taking care to break his teeth. Huntsmen flog their hounds while they feed them: eat or not eat, work or play, whipping is always in season. The hunts-

man's nomenclature is highly characteristic; his favourites are designated by such amiable appellations as the following:—Arsenic, Barbarous, Cerberus, Dragon, Firebrand, Fang, Havoc, Myrmidon, Ravenous, Ruffian, Spitfire, Torturer, Viper."

Is it possible that such absurd declamation as this could have the prize of one hundred guineas awarded to it?

Let us now compare this part of our subject with Mr. Youatt's description of hunting. "Are we authorised," he asks, "to follow to the death the hare, the deer, and the fox? We have a right to the flesh of the inferior animals as food; we have a right to destroy those beasts of prey that trespass on our property: and the only question is, the manner in which we shall procure our food, or rid ourselves of the destroyer. Now, let us look around. For what object was given the scent of the hound, and the exultation with which he abandons himself to the chase? If he were not thus employed, for what valuable purpose could he be used? We might have recourse to the strength and fleetness of the horse for other purposes, but how shall we account for his innate propensity for hunting? There never was a biped who entered so thoroughly, heart and soul, into the joys of the chase, as does the horse; and, if he is not over-weighted, or urged beyond his powers too far and too fast, his hunting days are the happiest.

"How shall we account for another fact, that, in every country and in every age of the world, the love of the chase has been the distinguishing characteristic of a considerable portion, and far from being the worst part, of the community. In wilder districts, how recklessly does the hunter expose himself to danger, arising from the face of the country, or the ferocity of the beast which he pursues. There is an innate, joyous love of the chase, which urges him on, and which prepares him likewise for other labours and for other duties, if his country should demand them."

Again—"As for the fox, he is legitimate prey. He is a felon by nature, and the preservation of our property demands that he should not be suffered to multiply too much among us; yet there are circumstances about him which should make us pause. The cowardly bag fox-hunting is less frequently practised than it used to be; but the preservation of the animal—the breeding him for the very purpose of sport—the 'made covers' in which he lives, and breeds, and enjoys himself, until 'he is wanted'—there is something out of tune here," and every rational right-minded sportsman will agree with Mr. Youatt on this point.

It is an easy matter to become sentimental with Dr. Styles, and quote poetry reprobating hunting as a

"Detested sport  
That owes its pleasures to another's pain,  
That feeds upon the sobs and dying shrieks  
Of harmless nature."



But we are discussing an important subject, not in the spirit of Poetry, but of Philosophy—as friends also to humanity;—and we are of opinion that field-sports, when properly conducted, were designed by the wise Creator to operate as a check to the excessive multiplication of various tribes of creatures. Throughout the whole of the animal kingdom various causes are in operation to prevent the unlimited increase of any one species, and the most constant and effectual of them is their destruction by each other. Beasts of prey are less prolific than the graminivorous and the ruminating tribes, for the obvious reason, that they are less easily subjugated or destroyed, and, by preying on the weaker animals, they prevent them from becoming the sole occupants of the soil. Lions and tigers in their turn become the prey of a superior foe. They are taken in the hunter's trap, or fall by his missile fires, while man, the great destroyer, is frequently the victim of brutal rage; he is gored by a bull, or struck down by a lion: and thus is the balance of life in the animal tribes adjusted.

We have now laid before our readers a fair sample of both Essays; they will clearly perceive the difference in the *animus* which exists in each. The Rev. Dr. Styles' Essay is replete with examples of cruelty against the humble inhabitants of the earth. It describes scenes of war and discord, of pain and agony, of racks and tortures, and "weeping and wailing and gnashing of teeth." Mr. Youatt, on the contrary, has calmly stated that which he has seen and thought—he has not appealed to the passions—nor made pretensions to any extraordinary degree of humanity—nor boasted of acuter feelings than his neighbours. From his thorough and complete knowledge of his subject, being familiarly acquainted with the natural habits and propensities of most of our domesticated animals, as well as those various states in which they are placed by art, he could not give the sanction of his name to any statements overcharged, or at variance with the truth; for, if he had been capable of balancing his well-earned reputation for the prize offered by the Society, he would have forfeited the confidence and goodwill of his professional brethren, who would not have failed to have detected and immediately have exposed the deceit. His graphic descriptions of the racer, the hunter, the carriage horse, the hackney and the draught horse, are true to the life; shewing that with, perhaps, a few exceptions, their lives are very pleasantly spent; and when we follow him into those diabolical marts or "repositories," where the omnibus and cab, the barge and rubbish-cart horses, are commonly purchased, and afterwards visit them in their miserable abodes, or observe them at their labour,—or finally follow these victims of human cruelty to their last home—the knacker's yard—we must confess that Mr. Youatt's sketch is unrivalled, and requires no panegyric from us;—it is an inimitable production, and speaks for itself.



It is much to be lamented that cruelty of any kind, which is opposed to the laws of God and the interests of man, should exist. We are surrounded by countless beings, all inferior to ourselves, whose qualities yield us the greatest happiness, or bring upon us the bitterest evil, according as we promote their happiness or augment their suffering by our conduct. To draw forth all their excellence, and cause them to diffuse joy around us—to avoid touching the harsher springs of their constitution, and bringing painful discord to our ears—it is indispensably necessary that we know the nature of their dispositions, and act with a proper regard to the relations established by the Creator between ourselves and them.

Dr. Styles appears to have discovered the origin of the evil :—“ Since animals,” he says, “ suffer by the economy of their nature ; *since the fall, at least, they have been doomed to die* ; not only have they been given as food for man, but they very generally prey upon each other. Every where power is contending with weakness, and life is struggling in the grasp of death. Death, premature death, seems to be the present condition of animal existence.”

Then the fall of man, according to the Rev. Doctor's ideas, was the cause of all the ills which the inferior animals have suffered since the beginning of the world. Let him again speak for himself. “ When man rebelled against God, the curse of his apostacy, the sin of Paradise, was a shock to the universe. Then was disturbed that beautiful order and amity which Eden exhibited when hostility was unknown to its harmless tenants, who, awed by the presence of their great superior and Lord, literally realized the enchanting vision which prophecy has disclosed as the distinguishing glory of the millennial age,—‘the wolf dwelt with the lamb, the calf and the young lion and the fatling together, the asp and the cockatrice caused no alarm.’ ‘There was nothing to hurt or destroy.’ When man became an exile, and was driven from this scene of surpassing loveliness, the confidence which he had inspired in the creatures subject to his power was succeeded by fear and dread. Wild and untameable, the beasts of prey sought independence in the jungle and in the wilderness. The work of general destruction commenced which has continued, without interruption or abatement, down to the present hour, its miseries aggravated and increased by the cruel agency of man.”

Again, “ Had man retained his moral nature unimpaired, and had his reason been left to exercise its power uncontrolled by depraved appetites and passions, there can be no doubt that his rule over the inferior creatures would have maintained them in their natural relation to each other, and with the least possible sacrifice of their enjoyment, and thus have held them in subordination to his own will.” “ But fallen apostate man began his career as a

destroyer—his history is written in the blood of his fellows—and feats and cruelty and violence emblazon the chronicle even of his amusements.”

Can it be possible that a work containing statements so unphilosophical and so untrue should have obtained a prize in this enlightened era? Could no enlightened friend have told him that the relations between the various species of animals and the evils which he has stated to have commenced with the fall of man, existed for myriads of years ere man placed his foot on this wondrous globe. The earth is its own historian—it tells its own history, and that history is not written in an unknown tongue, but in characters palpable to human sense and intelligible to the most common understanding. The different strata of the earth constitute the grand pages of its history. They mark its chronological progression, not by single years, but by periods of vast extent, during which mighty changes have been wrought, not only in the outward surface, but in the solid structure of the globe.

In particular portions of the globe its productions, both vegetable and animal, have been successively changed from marine to earthy, and from earthy to marine. Old races have perished, and new been produced, and the Creative Power, which is never quiescent in the great fabric of the universe, has been perpetually active in the little planetary speck that constitutes the habitation of man. Geological science proves to demonstration, that various creations of animals preceded that of man.

But is not the Doctor a little wrong, not only in his philosophy, but in his theology too? It may appear presumptuous for a veterinary surgeon to enter the lists with a Reverend Divine; but truth compels us to declare, that the Scripture will not warrant the conclusion, that “*no animal would have died, had it not been for the fall of man.*” There is not the least foundation for supposing the inferior animals to be included in the sentence of death pronounced upon man, but that the sentence was exclusively restricted to our first progenitors. We quote Dr. Buckland for our authority, and we believe that there are few better authorities to be found on this matter. “It behoves us,” says this eminent scholar, “rightly to apprehend the import of certain passages in Scripture, which are by some persons interpreted to imply a larger measure of condemnation, as the consequence of Adam’s fall, than the text will fairly warrant; because such interpretation, if established, would seem inconsistent with many phenomena of the world around us, and because the world is crowded with evidences of death (I refer especially to the case of extinct species of animals), comprehending within its influence all the inferior portion of God’s creatures, under times and circumstances which, we have reason to believe, admit not

of the cause of such death being in any way connected with the history of man."

It would be unnecessary to follow Dr. Buckland in his argument. He cites, in his sermon on death, numerous passages from the sacred writings, in which death is spoken of, both as to its cause and consequences; and from which it appears that, though most clearly inflicted as a punishment on *man*, it is by no inspired writer spoken of as a penal dispensation to any other living creature.

And now, having finished our notice of the "Fortunate Essay," we would commune for a moment with its author; and we would ask him, for what reason "The Animal Creation" was withheld from the public for two months after the adjudication of the Prize; and whether it is *bonâ fide* the one which was submitted to the arbitrators, and to which the Prize was awarded? We would likewise ask, on what principle of usage or of honour this author extracts nearly twenty pages of the most interesting matter from the rejected Essay of one of the candidates? and whether these plagiarisms were seen and approved of by the adjudicators?—a circumstance which, in truth, could not have taken place if the matter had been conducted in the plain and straightforward manner in which it ought to have been.

We are not advocating the cause of any individual. There might have been among the rejected addresses many far better written, and more deserving of the Prize, than that from which we have made so many extracts, and with the style and reasoning and tendency of which we have acknowledged ourselves to be highly pleased. But we would have such an Essay in every way worthy of the noble object with which it is identified; and, imputing no blame, and, from our ignorance of facts, having no right to impute blame, to the adjudicators or the Society, there are some circumstances in this affair which do not harmonize with the feelings with which we would rise from the perusal of such Essays.

K.

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## A CASE OF OSSIFICATION AND PERFORATION OF THE RECTUM.

By S. WHEATLEY, *Esq., Staindrop.*

[This letter has been mislaid, or it should have occupied its proper situation in the May number of our Journal.—Y.]

A PONY nearly 14 hands high, aged, died under the operation of physic. The dose was five drachms of Barbadoes aloes, with ginger, palm oil, and a few drops of oil of caraways. The pony was prepared with bran-mashes, as customary, and well attended to. I gave the ball in the morning.

On the following day, at noon, the groom complained that the



patient was not doing well. I saw the animal. He was dull, but there was nothing to indicate serious illness; and I confess that I thought lightly of the case. The weather being very stormy, the pony had not been taken out, but had been turned into a loose box.

At night the groom came to me again, and said that he thought the animal was worse. In truth, he was so; and that which a few hours before I had little heeded, had now assumed a very serious aspect. Both the pulse and the breathing were fearfully quickened. I bled him to the extent of four pounds, or more. He was sweating and pawing, and, when down, experienced very little relief, but began to bite and tear the rug which covered him. We could hear distinctly the borborygmi in his bowels, as if the physis was about to operate, and which it had only yet done very slightly. I got an injection ready, with a view to facilitate its operation, and introduced my hand into the rectum, in order to relieve that intestine of its contents.

A little way up I felt several hard substances, or excrescences—as they seemed to me—growing from the mucous membrane of the intestine; and, somewhat farther on, I found, to my astonishment, a lesion in the bowel, into which my three fingers readily entered. All hopes were now at an end, for the fæces which should have been discharged through the anus had passed into the cavity of the abdomen. The pony lingered on until the morning, and then, died.

On opening the abdomen, the fluid, &c. flowed rapidly out, and, the intestines being cleaned, the opening in the rectum was quite evident, and nearly large enough to admit my hand through it. I removed a large portion of the intestine, both anterior and posterior to the rent, and found several of the excrescences to which I have just referred; and, on examination, it seemed that they consisted distinctly of bone. Ossific matter deposited between the mucous and muscular coats of the rectum I did not anticipate finding. A sloughing process, the consequence of a deposition of this kind, had, probably, produced this opening through the gut. I did not use the clyster; so that no suspicion could arise that the pipe could have injured or perforated the intestine. Be this as it may, the pony died while under physis, and was, to all appearance, well enough before he took it. He had been only a few weeks in the neighbourhood, and was said to be of foreign breed. He was very thick-winded.—Was there any connexion between the physicking and the rupture of the intestine? and if so, what was the nature of that connexion?

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[It is not unusual to find hypertrophy of the submucous cellular tissue in the rectum. We have observed it many times, and oftener in old than in young animals. Sometimes there is merely



thickening of the submucous coat. Our veterinary writers have not done justice to this intervening cellular substance, or tissue. The author of "The Horse" stands among the worst of them, for he has not mentioned it: but, there it is, plainly enough, belonging neither to the mucous nor the muscular coat, but interposed between them; connected with both, and forming the medium of communication and union between the two.

It is liable to diseases peculiar to itself, or in which the other coats only partially share. Among them is the disease which my old pupil, Mr. Wheatley, so accurately, although unknowingly, describes. There is thickening—hypertrophy—of this cellular texture, or submucous membrane, shewing itself either under the form of mere increase of substance, with more, or less, or no inflammation of the mucous coat, and the muscular coat being more or less affected; or the thickening takes place in distinct spots, and then there are isolated enlargements, or 'granulations' as Mr. Wheatley very graphically calls them.

The peculiarity in this case, that these granulations became ossified, no writer, that we are aware of, describes: but it is well known that they occasionally become scirrhus, and there is but a step between this and the deposition of ossific matter.

Suppose a portion of this submucous membrane to have become hypertrophied, or scirrhus—what is its frequent progress? The thickening and the induration proceed to a certain extent, and then a contrary action takes place. The diseased part softens, suppurates, ulcerates, and hence the too frequent perforations of the intestinal tube, for the suppurative process spreads to the muscular coat without, and the mucous one within, and ulceration appears in the intestinal tube; or in some moment of pressure the peritoneal tunic gives way, and a fatal communication is effected between the interior of the intestine and the cavity of the abdomen: so we apprehend it was here. In some portions, the inflammation of the submucous coat had gone on to ossification. In other places, the induration had been succeeded by suppuration, and the wall of the intestine had been weakened, until in some unusual action of the peculiarly strong fibres of the rectum—strong, in order powerfully to assist in the expulsion of the fæces—the gut, pressed on by the fæces within, gives way. The physic might have caused the muscles of the rectum to act more powerfully than usual on the contents of the intestine. Its parietes, weakened in the manner that has been described, are burst asunder, and death ensues.

Not the slightest blame can be attached to Mr. Wheatley. At the worst, the life of the animal was shortened some few days.—Y.]

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## THE DISEASES OF THE PROSTATE GLANDS.

[MR. PERCIVALL, in the third volume of his Lectures, gives a very satisfactory account of the anatomy and functions of these organs, but we are not aware of any British author who speaks of the diseases to which they are occasionally liable. Is it that these diseases are of very rare occurrence? I never met with a case in the horse, or in cattle. In the dog I have seen inflammation and enlargement of these glands more than once, but it was at a period of my practice, when full employment during the day leaves to few of us either the time or the inclination to keep a faithful record of passing events. We repent this when it is too late. Neither Hurler D'Arboval in his Dictionary, nor Vatel in his "Elements of Veterinary Pathology," makes the slightest mention of it. The latter gentleman, however, has inserted a fugitive essay on the subject in the "Journal of Veterinary Medicine;" and M. Leblanc, to whom both the French and the English veterinarian are much indebted for the record of many an unusual and interesting case, has enriched another journal with a history of a somewhat similar one. An abridged account of them may be useful.—Y.]

### ON INFLAMMATION OF THE PROSTATE GLANDS.

*By M. VATEL.*

ALTHOUGH inflammation of the prostate glands is a disease of rare occurrence in the human being, it is occasionally seen in our domesticated animals. It assumes sometimes an acute, and, at others, a chronic form. Its most frequent cause, in the human being, is inflammation, acute or chronic, of the canal of the urethra. It sometimes is the result of a blow or a fall; at other times it owes its origin to calculi in the body of the gland. The disease is first announced by tenesmus, and the frequent desire to void urine. The attempts to discharge the fecal matter sadly increase the pain—the gland increases in size: on introducing the finger into the anus, the tumour which is formed can be readily felt, and pressure on it gives excessive pain. The evacuation of urine is rendered more and more difficult by the pressure on the urethra; and, if the sound is applied, it is passed with difficulty, and occasions much torture when the instrument arrives at the situation of the prostate. These symptoms are accompanied by acceleration of the pulse—increased heat of the skin—constipation—thirst—and impaired appetite.

It may be concluded that suppuration will take place in the gland, when there is no diminution of the symptoms nor any diminution of the obstacle to the passage of the urine. When the suppuration has commenced, there are usually occasional slight shiverings, and the pulse becomes more developed and softer. At

length the pus makes its escape into the bladder, or through the urethra or rectum. After the evacuation of the pus, the urine is discharged freely. If this fluid has been collected in one cyst only, the suppuration—at first abundant—diminishes by degrees, and after a somewhat long period the patient becomes perfectly recovered; but when there are two or more distinct cysts in the body of the gland, it is rare that they all come to maturity and burst. Then the frequency of the pulse continues, and the patient wastes away, and dies of marasmus.

Chronic inflammation of the prostate often succeeds to acute; but more frequently the disease is developed at first under a mild form, and is never accompanied by any acute inflammatory phenomena. It is sometimes difficult to recognize the commencement of chronic inflammation of these glands. The jet of urine becomes smaller—it diminishes every day, until at length it is discharged only drop by drop.

After acute inflammation the prostate is usually found enlarged, red, easily torn, and containing several small purulent deposits, or one only, occupying the whole of the body of the gland. After a case of chronic inflammation, the gland is ordinarily indurated, scirrhous, and often containing calculi.

It is deemed of much importance to procure a speedy resolution of the inflammation, and to prevent both suppuration and the change to a chronic state. For this purpose, general bleeding is resorted to—leeches are applied to the perineum—partial or complete warm baths are used—and emollient and narcotic injections and cataplasms are had recourse to. A very small quantity only of fluid is allowed. Mercurial frictions are sometimes applied to the perineum. In retention of urine it may be necessary to introduce a catheter, or, in some few cases, to puncture the bladder.

The following case has just occurred. A poodle dog, highly fed, and that was almost always shut up in the apartment of his master, had appeared unusually dull for two or three days. He would not eat, he was constipated, and his urinary evacuations were rare. His master administered some emollient injections, and gave him a decoction of lime-flowers with nitre. His depression increased every day—the constipation became more obstinate—and he scarcely evacuated any urine.

He was brought to our hospital on the 2d of May, 1828, about six o'clock in the morning. He held his head low—he staggered as he walked—it was with difficulty that his hinder limbs were moved at all—the membranes were red—the tongue was hot and dry—the respiration accelerated—the pulse hard, frequent, and concentrated—the belly distended, and painful when touched, and some mucus of a yellowish-white colour exuded from the anus.

At half past six o'clock he was placed in a warm bath for half an hour—a dozen leeches were placed on the hypogastric region—



emollient cataplasms were placed under the belly, and clysters of the same character injected.

In the course of the day the intensity of the symptoms increased—the thirst was insatiable—the animal drank nearly a pint of water, which, in a short time afterwards, he returned by vomit. The respiration became more accelerated towards night—the debility was extreme—the stercoral and urinary evacuations quite suspended—a glairy yellow matter was discharged from the anus—there was extreme tension of the abdomen, and the expression of great pain when the least pressure was made upon it. The finger being introduced into the rectum, no stercoral matter could be detected. The animal was again placed in a bath towards evening.

3d.—The symptoms unchanged—baths, cataplasms, and injections, as before. Towards evening the patient expressed the most extreme state of distress—the respiration became more and more accelerated—the eyes were fixed—and, in the course of the night, the animal died.

He was opened on the following morning. The stomach and intestines presented nothing unusual but a slight blush of inflammation on the mucous membrane of the rectum. The gall-bladder, liver, and spleen were in a normal state, as were the kidneys and the ureters. The bladder was distended to the greatest degree—its mucous membrane was of a brown-red colour, especially towards the fundus, where it presented several spots of ecchymosis. The prostates were much enlarged, and their tissue had degenerated into a greyish brown mass. This altered structure extending through every part of these organs, pressed on the neck of the bladder, and closed the urinary canal, which did not in the slightest degree participate in the scirrhus state of the prostates.

The lungs were gorged with blood—the four cavities of the heart, and the large vessels, were filled with fibrinous clots. The other contents of the thorax were free from disease. No trace of lesion was discoverable either in the brain or spinal marrow.

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#### SCIRRHOUS INDURATION OF THE LARGE PROSTATE, AND RAMOLLISSEMENT OF A PORTION OF THE GLAND.

*By* M. U. LEBLANC.

A BARBET dog, five years old, had been occasionally subject to retention of urine nearly three years. These attacks were at first rare, but they had become much more frequent during the last year. They gave way, for some time, to a regimen of milk exclusively, continued during some days.

June 11, 1828.—A new attack of retention of urine supervened. We employed the same simple means as before, but without the slightest success. The mistress of the dog, and whose side he seldom quitted, attributed this attack to his running, and with some



considerable speed, a distance of four leagues—nine miles. This had taken place in the morning, and he was brought to Paris in a cabriolet in the evening.

He refused to eat—his belly was distended, and could not be touched without great pain to the animal—the bladder seemed to be full to distention—the muzzle was hot and very dry, and the pulse accelerated. Some mallow-root water and olive oil were administered to him, as medicine and injection. He had had two alvine evacuations since the morning, but he had not voided any urine. All this was told me by his mistress, but I was not consulted until the 14th.

14th.—The belly was distended, and painful to the touch; the bladder, which could be easily felt through the abdominal parietes, was exceedingly distended—the pulse was small and quick—the skin hot—he staggered as he walked—the back and the loins were curved as the animal walked, but, generally speaking, he was lying down:—although hitherto perfectly obedient, he was now utterly regardless of his mistress's commands. He was bled from the jugular vein; a decoction of mallows, mixed with honey, was given to him, but he vomited a great part of it soon after it was administered. At night a mucilaginous cataplasm was placed over the belly.

15th.—He had voided a great quantity of urine during the night. The belly was less distended, but the bladder still contained a great deal of urine. The dog cried sadly when we pressed on the pubic region of his belly. He remained couched—his respiration was precipitous, and his mouth was dry and hot. Put him into a warm bath of bran and water for half an hour.

Towards noon we applied twenty leeches over the region of the belly. They all adhered, and, when they had fallen off, we placed the animal into a second bath of bran and water. We tried, towards evening, to get him to stand, but it was with difficulty that he could keep on his legs, and he staggered sadly when we attempted to get him to move. His urine came from him, drop by drop; emollient injections and draughts were administered, the latter of which he returned almost as soon as they were given.

16th.—The belly is still distended and tender. Mucilaginous injections were administered. There was no alvine evacuation. Drinks of whey and barley-water were given, which were almost immediately vomited. The dog lay couched on his side, and his four legs and his neck distended. At 2 P.M. the bath was repeated; a little after which his respiration became exceedingly accelerated and laborious; a frothy saliva issued from his mouth; and he died at half past two o'clock.

The post-mortem examination was made very soon after his death. The abdominal cavity contained a small quantity of serous fluid, slightly tinged with red. The external surface of the intestines and the stomach were nearly uniformly of a somewhat deep

red colour. The serous membrane of the bladder, or rather the sub-serous cellular tissue, was of a vivid red, and the vessels highly injected. The bladder contained more than a pint and a half of urine. This fluid, in which swam many white and red flocculi, was turbid, and of a citrine hue. The mucous coat of the bladder was thickened in every part, but unequally so—the thicker parts corresponding with certain circumscribed red patches. The greatest thickness was at the centre. These spots were more numerous, and curiously grouped at the lower and posterior part of the viscus.

The great prostate had acquired the size of two pullets' eggs. The sub-peritoneal cellular tissue which enveloped the gland was infiltrated by a yellow citrine fluid. The infiltration was continued to the cellular tissue of the neighbouring organs, especially along the ureters.

The great prostate, studied exteriorly, was of a semicircular form. It was indurated through almost its whole extent, with the exception of, here and there, some soft points. On being cut in different directions, its tissue presented the following characters. It was hard, white, of a pearl colour, and creaking under the bistoury through almost its whole extent. In some few points only we could still recognise the peculiar texture of the gland. About the regions which yielded under the finger on the exterior of the gland, and in the thickness of the tumour, there were found cavities containing a fluid matter, and, relative to its density, between a serous fluid and pus. Some broken-down remains of the original tissue mingled with this fluid. These cavities were of an irregular form—their internal surface was rugous, fungous, and of a violet-red colour.

The kidneys were triple their natural size, and the left one larger than the right. They were enveloped by cellular tissue, infiltrated by a great quantity of serosity. A voluminous mass of flocculent serosity was accumulated immediately round each kidney. The pelves of the kidneys inclosed a small quantity of red-coloured urine, and a great quantity of ropy mucus, irregularly mingled with streaks of blood.

The urethra contained a small quantity of mucous and purulent fluid. It was contracted in the portion which corresponded with the great prostate. Its mucous membrane was there more thickened and reddened than in any other part.

*Journal de Méd. Vét.*, 1828, p. 319, and *Jour. Théorique*, 1832, p. 179.

A LIST OF STUDENTS WHO HAVE PASSED THEIR EXAMINATION AT THE ROYAL VETERINARY COLLEGE, LONDON.

May 14, 1839.

Mr. Evers Musgrove, Doncaster, Yorkshire

Mr. Charles Wallis, Hartfield, Sussex

Mr. John Stoddart, Broken Cross, Cumberland.

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VETERINARIAN.

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COMPARATIVE ANATOMY AND PATHOLOGY.

By Mr. YOUATT.

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LECTURE XXIV (*Concluded*).

*The Mucous Membrane of the Nose—The supposed Influence of the fifth Nerve—Magendie's Experiments—The peculiar Sensation of Smelling belongs to the Olfactory Nerve—Instance of the peculiar Acuteness of the Nerve of Smell—The Influence of certain Diseases on the Sense of Smelling—Observations on Scent in Hunting—Anecdote of the Sense of Smell in a Canary-Bird.*

*The Ethmoid and Turbinated Bones*, on which I have described the olfactory nerve as ramifying, are covered with *mucous membrane*, a soft and extremely vascular substance lining the passages, by which the internal portions of the frame communicate with the external air. It derives its name from the peculiar character of its secretion. It lines all the neighbouring sinuses, one of whose offices, and the principal one, is to provide a sufficient quantity of adhesive fluid to protect and to moisten the membrane covering these bones and the *septum narium*. The ethmoid and turbinated bones, and the septum, being in close approximation, and covered by this adhesive substance, most of the odoriferous particles which, floating in the atmosphere, enter the nasal cavity in the act of inspiration, are stopped in their course. A few of those which are of a gaseous character reach the larynx; but most of those which penetrate to this second guard are arrested there.

It is essential to the perception of odours that this membrane should be constantly moist. When, at the commencement of catarrh, the mucous secretion is diminished or suspended, and the



Schneiderian membrane is dry, the faculty of smelling is lost, or very imperfect. It is also necessary that the odorous particles pass in a current over the membrane; hence, by stopping or diminishing the breathing, or by giving force to the inspiration, we at our pleasure increase or diminish the perception of odours. Whoever has observed the manner in which the hound sometimes labours to catch the scent, will perfectly understand this process.

Protected by this mucous coat, the olfactory nerve here terminates in countless minute ramifications, and it is the impression made on these ramifications by certain effluvia, of inconceivable minuteness, and that impression conveyed to the brain, which we designate the sense of smell.

*The supposed Influence of the fifth Nerve.*—The discoveries of modern times, with regard to the function of this nerve, constitute a new era in physiology. It has not only been demonstratively proved that all the anterior and lateral parts of the head, and the mucous membranes of the conjunctiva, the nose, and the mouth, owe their sensibility to it, and all the muscles of mastication, with their associate organs are indebted to it for their motor power, but it is intimately connected with the sympathetic nerve, as that still continues to be erroneously called, and also with various parts of the ganglionic system. This being now universally acknowledged, several physiologists, and of no mean repute, have considered it as discharging all the functions which used to be attributed to the nerves of peculiar sensation. At the head of this new school stands one who has distinguished himself by many valuable physiological discoveries, with which, however, have been mingled a more than equal number of hasty and erroneous guesses, and the whole combined with a system of reckless cruelty, which has scarcely a parallel in the records of science.

Among other opinions which Dr. Magendie has broached is this, that the olfactory nerve is not the nerve of smell, but that this property belongs to the nasal branch of the fifth pair. No modern anatomist has doubted that the fifth pair is the nerve of *common* sensation, as it regards the nose, the eye, and the ear: the question is, as to the *peculiar* sensations of smelling, seeing, and hearing. These things are essentially different, and it is the duty of the physiologist not to confound them. Magendie destroys the olfactory nerve, and then he applies to the nostril ammonia, oil of lavender, and other substances, from which proceed a strong and acrid gas. The animal is conscious of their influence, and rubs his nostrils and sneezes; and “therefore,” says he, “although the olfactory nerve is destroyed, the sense of smell remains.” It was forgotten that all the substances with which he experimented were excitants of the common sensibility of the nostrils; and he only



proves that the sensibility to the acrid or stimulating gases was not destroyed, although the sense of smell was gone. This was put satisfactorily to the test. A piece of meat was rolled in paper and placed before the dog, but he did not take any notice of it.

The experiment was reversed. The nasal branch of the fifth pair was divided in another dog. He was almost insensible to the substances from which the acrid gases were eliminated; but food well rolled in paper, was presented to him, and he unrolled the paper, and got at the food, and ate it,—proving most satisfactorily that it was the common sensibility of the part that was destroyed, while the olfactory nerve remaining untouched, the dog was fully sensible to the odour of the meat.

I used, however, to think that there was, notwithstanding this, some mysterious connexion between the nerves of common and special sensation; and that their agency must occasionally be combined in order to render the function of either complete. I used to fancy that I saw the nerves of common and peculiar sensation combining for the perfection of the sense of smell. The influence of the fibrils of common sensation on the tissue might dispose the nervous pulp of peculiar sensation more acutely to receive the impression, and to cause it to be conveyed more energetically to the common sensorium: but I am now disposed—at least, the parts being in a state of health—to doubt or to deny this; and my present feeling undoubtedly is, that the fifth nerve has no influence either on vision, hearing, or smell. The records of human medicine contain well-authenticated instances of disease of the whole trunk of the fifth pair, and insensibility of one side of the head, while vision and smell remained perfect.

It is a singular circumstance, and illustrative of our present subject, and shewing likewise the perfect distinctness of character between the nerves of common and of special sensibility, that this very nerve, in common with the optic nerve, may be divided without the animal experiencing the slightest pain, or being immediately conscious of the fact. For a knowledge of this we are indebted to Dr. Magendie.

In my younger years, I was much associated with a gentleman who had been blind almost from his infancy. I used to admire how beautifully his other senses almost fully compensated for the loss of sight. I was sometimes almost incredulous as to his perfect loss of sight: but I did not afterwards easily pardon myself for my incredulity; and he once gave me a striking proof of the acuteness of his *common* sensation. I did not mean to hurt him, but I wanted to try whether I could not lead him plump against a loaded waggon that was standing in our road. Ere he was within six feet of it, I had a rap on my pericranium, which I richly deserved, and did not

soon forget. His sense of smell was peculiarly acute. I used to put this to the test sometimes. We were, perhaps, going to drink tea with some of our neighbours, and, after I had led him into the parlour, I used to tell him the names of all but one or two, who, at a signal from me, were as still as mice. Three minutes, however, rarely passed ere he would address them by name, and laughingly scold them for encouraging me in my roguery. He never made a mistake about this, or challenged a person who was not really present.

That almost every disease of the nasal membrane impairs the sense of smell cannot for a moment be disputed. In every dog with distemper, and especially if there is a purulent discharge from the nostrils, the sense of smell is not only impaired, but for awhile almost suspended. The living on certain descriptions of food is known to have the same effect; yet, to the disgrace of the veterinary surgeon, the diseases of the olfactory apparatus, their causes and remedy, have been passed over in almost utter silence. It is a subject, however, well worthy of the attention of the veterinarian. That the sense of smell may be rendered keener, and that it may acquire an accuracy of discrimination almost incredible, we have abundant proof; but no one has gone beyond the mechanical means,—the system of tuition by which it may be improved,—or thought of the occasional indications, or the causes of its impairment. I do not profess to have either the professional or the sporting experience to qualify me for this task; and I merely mention the subject as worthy of far more attention than has been paid to it.

In the course of an extensive practice on the dog, I have not only seen the occasional influence of coryza, ozena, and fistula lacrymalis in suspending, for awhile, the sense of smell; but for a long time afterwards rendering it obtuse and imperfectly discriminative, and causing a faithful and valuable animal to be underrated or destroyed. A blunderer who is unconscious of, or will overrun, the scent, is certainly a great nuisance in the field, and will try the patience of any sportsman. A little common snuff, or a blister along the nasal bones, has more than once been useful. I have found utter palsy of the olfactory nerve, either connate or the consequence of distemper, and there all means have failed.

A few remarks on *scent*, or the faculty of smelling in dogs, may not here be out of place.

*Scent*.—In the biped and the quadruped, and every living being, there is not only a constant appropriation of new matter to repair the losses which the frame is continually sustaining—there is not only the process of nutrition, but there is, from every organ in the frame, a constant elaboration of gaseous or fluid matter—an inces-

sant transpiration, maintaining the balance of the different systems, and essential to the continuance of life. This effluvium, as the animal moves from place to place, is attracted, and detained for awhile by the substances with which it comes in contact, or it remains floating in the atmosphere. Among other properties it is characterized by a peculiar *smell* or *scent*, belonging not only to each species of animal, but peculiar to each individual, either generally or under particular circumstances.

The sportsman takes advantage of this, and as most species of dogs possess great acuteness of olfactory power, and distinguish, or are readily taught to distinguish, the peculiarities of these effluvia, and to recognise, at once, the animals from which they are derived, the dog is taught not only unhesitatingly to distinguish the scent of the hare from that of the fox, but of the hare or fox which he is pursuing, but has not yet seen, from that of half-a-dozen others that may be started during the chase.

The dogs that are selected for this purpose are those the conformation of whose face and head gives ample room, as has already been stated, for the development of the olfactory apparatus, and these are the different species of hounds; but a systematic education, and, too often, a great deal of unnecessary cruelty, is resorted to, in order to make them perfect in their work.

The distinction between the scent of the fox and that of the hare is soon learned; and when it is considered that the hunted hare is perspiring at every pore, and, her strength being almost exhausted, is straining every limb to escape from her pursuers, the increasing quantity of vapour which exudes from her will prevent any other newly started from being for a moment mistaken for her. Almost every dog, however, except him whom indulgence and luxurious food has spoiled, is enabled to track the path of the man or animal to whom he has been accustomed, and whose peculiar scent is familiar to him.

If the scent is nothing but the effluvium or gas extricated from the hunted animal, many of the supposed difficulties respecting it are immediately removed. The goodness of the scent depends on the influence of the soil, and the herbage, and the atmosphere. When the atmosphere is loaded with moisture, and rain is at hand, the gas is speedily dissolved, and mingles with the surrounding air. A storm dissipates it at once, while the cessation of the rain is preceded by the return and increased power of the scent. A cold, dry, easterly wind condenses and absorbs it; and the mischief is even more speedily and irretrievably done by superabundant moisture. On fallows and beaten roads the scent rarely lies well, for there is nothing to detain it, and it is swept away in a moment; while over a luxuriant pasture, or by the hedge-row, or in the coppice, it lin-



gers, clinging to the grass or the bushes. In a sun-shiny day the scent is seldom strong, for too much of it is evaporated by the heat. The most favourable period is a soft, southerly wind, without rain, the scent being of the same temperature and gravity with the atmosphere; although it spreads over the level it rises not far above the ground, and being *breast-high*, enables the hound, keeping his muzzle in the midst of it, to run at his greatest speed\*. The different manners or attitudes in which the dogs run, afford pleasing and satisfactory illustrations of the nature of the scent: sometimes they will be seen galloping with their noses in the air, as if their game had flown away; and, an hour or two afterwards, every one of them will have his nose on the ground. The specific gravity of the atmosphere has changed, and the scent has risen or fallen in proportion. A westerly wind stands next to a southerly one for a hunting morning. This is all simple enough, and needs not the mystification with which it has been surrounded.

Mr. Delmé Radcliffe, in his splendid work on "*The Noble Science*," just published, has some interesting remarks on the scent of hounds. He says, that "there is an idiosyncrasy—a peculiarity in their several dispositions, which requires the skill of a professor to cope with. Some young hounds seem to enter on their work instinctively—from their first to their last appearance in the field they do no wrong—they commence with the scent to which they were born, and afford a moral to beings of a higher class in their devotion through their lives to the purposes of their creation. Others, equally good, will take no notice of any thing—will not stoop to any scent during the first season, and are still slack at entering even at the second; but ultimately are distinguished at the head of the pack, and such, I have always observed, last some seasons longer than the more precocious of the same litter. Others have an almost inveterate propensity to run any thing and every thing, by scent or by view, and act altogether on the voluntary principle as soon as they are emancipated from their couplings. A love of hare will descend, in particular blood, through generations, and will occasionally demonstrate itself, especially on bad scenting days, when a hound that is at any time unsteady must and will hunt something; but the same hound, when settled to a fox, may be invincible.

I may, perhaps, be permitted to add here an anecdote respecting the sense of smell in birds, and which was related by Mr. Mayo, in a lecture "On the Sensations," delivered by him, May 20th, 1836.

"Some years ago, a *Canary-bird* was exhibited, in the Quad-

\* Johnson's Shooter's Companion.



rant, which had the power of discriminating, on its return, any card that might be touched while it was in another apartment. I suspected that the little creature was enabled to do this trick by means of its smell; and satisfied myself by the following experiment. Instead of touching the card with my hand or glove, I touched it with my pencil, and the result was that the little conjurer was foiled, and could not distinguish the particular card I had moved."—*Lancet*, 35-6, ii, 318.

The same odours appear to make very different impressions on different animals. The carnivora, with a few exceptions, appear to be insensible to the odours of plants: the ruminants rarely examine with much attention any animal substances. Yet even the ox and the sheep, and especially the horse, will test his companions, and, when sufficiently familiarized, form, I have sometimes thought, no very inaccurate judgment of the human being by the sense of smell. I scarcely need to remind you how intimately connected is the sense of smell with the continuance of the species of almost every quadruped.

## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

### DIGESTION IN THE RUMINANTS.

[We are pleased that this portion of the important subjects discussed by the Heidelberg Professors follows so closely on the discussion on Rumination, in the Veterinary Medical Association. We will give a literal translation. Our readers must form their own conclusion.—Y.]

RUMINATING animals, whose natural food consists of materials the most difficult of digestion—fresh or dried herbs, leaves or haum—are, as is well known, those which, of all the mammalia, possess the most complicated digestive organs. They have four stomachs, the parietes of which, as in other animals, are composed of four layers, or *coats*, placed one above another,—an external or serous, a muscular, a cellular or vascular or nervous, and an internal or mucous. The vascular and mucous tunics present the most striking differences with regard to their disposition.

The first stomach, and the largest of all, is the rumen or Paunch—*Le Herbier*—that which contains the grass or herbs of which the food consists. It resembles a large reservoir, divided into various

compartments. Its internal surface presents a great number of large flattened papillæ, and it is lined by a strong and thick epidermis.

The second stomach—the Reticulum, or *Bonnet*, is the smallest of the four. It is of a globular form. It communicates with the paunch by means of a large opening, while a very evident contraction separates it from the third stomach. On its internal surface are traced numerous large polygonal divisions, or cells, the area and the borders of which are studded with little papillæ. The internal coat of this stomach is, like that of the first, cuticular.

The third stomach—the Maniplus, or *Fuillet*, is larger than the preceding. It is distinguished by certain falciform leaves, in number about 100, which project from its surface. Some of them are large and others small, and they are placed alternately with relation to this. They consist of folds of the cellular and mucous membranes of the stomach. Numerous small papillæ are also scattered over their surface, and covered by a cuticular membrane. The maniplus communicates with the fourth stomach by means of a considerable opening.

The last stomach, called the Abomasum, or *Caillette*, is larger than the maniplus. It is of a lengthened and somewhat globular form. The pyloric orifice separates it from the duodenum. It is lined by a well-developed mucous membrane, and has no epidermis. This membrane forms many projecting and longitudinal folds, and is supplied by numerous bloodvessels and glands. In relation to its structure, it resembles the simple stomachs of carnivorous and omnivorous animals.

The muscular membrane of these stomachs is composed of longitudinal and circular fibres. These are thickest and strongest in the two first stomachs. The œsophagus, which is very large and dilatable, communicates with the three first stomachs. Its communication with the paunch and the reticulum is effected by means of a long cleft or scissure, which can be opened or closed according to circumstances. The edges of this cleft are thick and prominent. They are composed of a duplicature of the mucous membrane, and of strong muscular bands, taking a longitudinal direction. When they are drawn close to each other they form a canal, which leads directly into the third stomach; but when any large pellet of food, coarsely masticated, separates them from one another, they form an opening into the first and second stomachs, and the passage into the third is simultaneously closed by the contraction of the muscular fibres with which its borders are furnished. It results from this, that the imperfectly-masticated food falls into the two first stomachs, whence it is again brought into the œsophagus in the act of rumination.

The œsophagus is distinguished by two layers of muscular fibres, which wind spirally round this tube in opposite directions, crossing but not interlacing with each other.

*The Prehension of the Food.*—As long as the young ruminant—the calf and the lamb—is nourished only by the milk of the mother, this liquid passes directly into the third and fourth stomachs, through the œsophagean canal. It does not, however, remain in the third stomach, or enter in the least degree between its leaves, but goes at once into the abomasum. The two first stomachs are, at this time, empty, and contracted upon each other. When these little ones begin to eat grass and hay, without altogether ceasing to suck, the new food is carried into the paunch and the reticulum. When the adult animal feeds, he contents himself with very slightly crushing the aliment, and impregnating it with that quantity of saliva which is necessary to enable it to be swallowed. It is then, in masses of considerable hardness, forced down the œsophagus by the action of the spiral muscles of that tube; and, having arrived at the base, it forces apart the edges of the cleft which leads to the first and second stomachs, and enters these viscera without being able to reach the maniplus, its volume not permitting it to pass through the small canal which conducts to that viscus.

When the ruminant drinks any considerable quantity of fluid, it penetrates into all the stomachs. We have put this to the test of experiment. We have suffered one of these animals to drink freely of coloured water, and, on immediately destroying him, we have found all four of the stomachs more or less filled with it.

*The Alteration which the Food undergoes in the first and second Stomachs.*—The food, gradually accumulating in the paunch, distends it, and stimulates its parietes. In consequence of this stimulation, the muscular membrane alternately contracts and relaxes itself at several points, following the direction of the fibres, and thus producing a slow peristaltic motion. At the same time, it secretes, very abundantly, a yellow fluid, somewhat thick, and of a slight saline taste, which mixes with the contents of the rumen. We have found a fluid of this character both in cattle and in sheep. The paunches of the calves which we subjected to examination, contained a little straw and some leaves and hay. Those of the full grown beasts were filled with hay and chopped straw, or grains of epeautre\*. The paunch of the sheep usually contained straw, grass, and oats. In all of them these substances were most imperfectly, masticated and a little softened.

\* A variety of wheat (*Triticum Spelta*), cultivated in some parts of Germany as a food for cattle; and, in Italy, on account of the *Leghorn-plat* used for bonnets.—Y.



We have found the same substances, and in the same state, in the reticulum of these animals.

The aliment contained in the rumen, and in the reticulum, and the abundant liquid which mingled with it, was strongly alkaline, and effervesced with acids. This was always the case with oxen, and also with sheep that were fed on straw or grass.

The alkaline property of the fluid contained in the paunch has been observed by many physiologists. Vicussens remarked that the tincture assumed a green colour in the paunch of a goat; and Rast saw the syrup of violets change to the same colour in the first stomach of a sheep. Carminati found the fluid in the stomach of a sheep of a green colour, and an unpleasant smell. It turned the syrup of violets green, and had a slightly bitter and saline taste: it also strongly effervesced with acids. The testimony of Brugnetelli goes to the same point.

A chemical analysis of the contents of these two stomachs has proved the existence of the following substances:—

1. *Free Carbonic Acid*.—This is disengaged at the commencement of the distillation of the fluid in the rumen of oxen and sheep fed on grass; and also of that contained in the reticulum of sheep that had fed on straw.

2. *Hydro-sulphuric Acid*.—This is found both in cattle and sheep fed on grass.

3. *Free Acetic Acid* has been detected in the paunch of sheep fed on oats, and also in that of calves; likewise in the reticulum of sheep to which oats and straw had been given. This acid may be produced by the decomposition of the alimentary substances, since it is only necessary to infuse oats in water in order to produce it. Free hydro-chloric acid is not found in the fluids of either of the three first stomachs, for, on being burnt, they all yield an alkaline carbonate.

4. *Free Butyric Acid* has been recognised in the sheep that has been fed on oats. It was found in a considerable quantity in a calf, not entirely, however, from the process of secretion, but in part arising from the butyric portion of the milk.

5. *Carbonate of Ammonia*.—This is found in the paunch and reticulum of cattle; also in that of sheep fed on grass and hay; or who had been destroyed after the pancreatic duct was opened. The ammonia was super-saturated by carbonic acid. This may, perhaps, depend on the bi-carbonate of soda contained in the saliva, and, consequently, swallowed with the food, being decomposed by an ammoniacal salt, which probably existed in the fluid secreted by the first stomach. It must, however, be attributed, in part, to the decomposition of the food in these stomachs.

6. *Acetate of Ammonia* has been obtained by distilling the



fluid contained in the paunch of a sheep that had fed on straw and oats, and also in that of a calf. It is also found occasionally in the reticulum.

7. *Butyrate of Ammonia* has been discovered in a very small quantity in the paunch of sheep fed on oats or straw.

8. *Albumen*.—This has been found in a small quantity in the stomach of sheep fed on oats. It also existed in calves—at least, the coagulum produced by boiling consisted entirely of the caseous matter of the milk.

9. *Matter precipitable by Acids*.—This has been recognised in a small quantity in the rumen and reticulum of oxen and sheep fed on grass. It is doubtful, however, whether the precipitate which is formed consists of caseous matter, for the alkaline fluid may readily hold in solution some substance precipitable by acids.

10. *Matter precipitable by Chloruret of Tin*.—A great quantity of this has been detected in the liquids contained in the rumen and reticulum of cattle and sheep. As the chloruret of tin is also precipitated by the alkaline phosphates and carbonates; and as these salts—the latter more especially—are abundant in most liquids, it is difficult to decide whether the chief precipitates, which are here obtained in considerable quantities, depend altogether on any animal matter, such as the saliva or osmazome.

11. *Matter which is reddened by the Hydrochloric Acid, and which escapes in distillation*.—This is found in oxen and in sheep that had been fed on grass, and also in those that had been destroyed after the opening of the pancreatic duct.

12. *The fixed Salts obtained by destructive Distillation*.—The following table will represent their comparative quantities:—

	Alkaline Carbonate.	Alkaline Phosphate.	Alkaline Sulphate.	Alkaline Chloruret.	Carbonate of Lime.	Phosphate of Lime.
Cattle . . .	5	5	1	3	3	4
Sheep fed on grass .	5	5	3	5	1	4
Ditto on hay .	5	4	1	4	0	5
Ditto on oats .	2	5	1	5	1	4

The alkali consisted of soda with a little potash in cattle and sheep. The least quantity of potash was found in calves.

The fixed salts obtained by destructive distillation of the fluids of the reticulum were precisely of the same character\*.

The action which the two first stomachs, and the paunch especially, exercises on the food, consists in softening it by means of the alkaline fluid which they secrete, and which mingles with the aliment. The food seems likewise to undergo, at the same time, a

\* Although this long chemical account may not be interesting to the general reader, the scientific inquirer will occasionally refer to it with considerable interest.—Y.

kind of decomposition, which is accompanied by a disengagement of ammoniacal gas. Perhaps the carbonate of soda in the saliva acting on the azöotic organic materials may assist in accomplishing this purpose. A hydro-sulphuric acid gas is almost always disengaged during the maceration and softening of vegetable matter, whether green or dry. We have found a considerable quantity of this gas in the paunch of oxen and of sheep that have been fed on grass. According to Lemeyron and Fremy, it is found in considerable abundance with carburetted hydrogen and carbonic acid in the stomachs of ruminants that have fed principally on trefoil. It is possible that the decomposition of the gluten and albumen, and other similar matter contained in the trefoil, and in all other green herbs, may be the cause of the development of these gases.

The aliment is very slowly softened in the paunch, or expelled from it. Carminati has never found this reservoir completely empty in sheep that have been kept six or eight days without food. The result has been the same in our own experiments; for, after we have kept sheep without food more than two days, we have found the paunch in a manner filled both with hay and grass.

The aliment contained in the paunch and mixed with the fluid secreted from its parietes, appears to pass, by little and little, into the reticulum. It would then appear that, by the contraction of the strong muscles of this viscus, the portion of the food already dissolved is forced into the maniplus through the narrow passage which forms a communication between it and the reticulum. The portion which still possesses any degree of consistence is retained in the reticulum, and assumes a globular form. This mass must be returned to the mouth to undergo a new imbibition of saliva and a more complete mastication. This constitutes the act of rumination.

*Rumination.*—After the aliment has remained a certain time in the paunch, and has been sufficiently macerated in the alkaline fluid of that reservoir, rumination commences. Young animals who continue to suck, and whose food is derived entirely from the mother, do not ruminate; but this process commences with them as soon as they begin to eat any kind of solid food.

During the act of rumination the animals are in a state of comparative repose. They are generally found lying down and resting on the left side. They neither ruminate when they are at work, nor when they are travelling, except the motion is exceedingly slow, or the work very light. A profound inspiration precedes the act of rumination. The pressure which the diaphragm, and probably also the abdominal muscles, exercise on the paunch and the reticulum, joined to the contraction of the strong muscular parietes of these stomachs, cause a globular mass of food to escape from them, and that, passing through the opening of which men-

tion has been made, arrives at the inferior part of the œsophagus. The animal then expires, and the mass which the contraction of the spiral muscular fibres of the œsophagus had caused to escape through the œsophagean opening of the diaphragm—relaxed and dilated during expiration—remounts into the mouth by the antiperistaltic motion of that tube. We are unable to say whether this process is altogether involuntary, as Brugnone thinks it to be, or whether the animal can, at pleasure, cause the food to pass from the reticulum into the œsophagus by the aid of certain inspiratory movements. This last opinion, however, seems to derive some support from the fact, that the animal suddenly suspends the process of rumination at the sight of any extraordinary object, or at any loud and unexpected noise, and then, after a certain lapse of time, again begins to chew the cud.

Soft and farinaceous food, bread, boiled potatoes, carrots, turnips which are reduced to a pultaceous mass during their continuance in the paunch, are not ordinarily returned to the mouth, but pass from the rumen and the reticulum into the maniplus, as Duvérney, Haller, Bourgelat, Pozzi, and Brugnone have proved. Fresh and soft grasses are partially ruminated; but it is principally on the hard and coherent food, as straw, hay, and dry leaves, that this comminuting process is performed.

The aliment returned to the mouth is, by the lateral grinding motion of the lower jaw under the powerful action of the pterygoïdean muscles, reduced to a homogenous pulpy state, and abundantly saturated with saliva. If it was not originally very hard, thirty or forty lateral movements of the jaw suffice to crush it; but when it has been very fibrous or shelly, from fifty to eighty movements of the jaw have been counted.

Having been thus a second time masticated and comminuted, the aliment does not return to the paunch, as Payer asserts, nor to the reticulum, as Duverney, Glisson, and Brugnone maintain; but it forms a semi-fluid *bouillie*, which passes without impediment into the maniplus, through the œsophagean canal.

[To be continued.]

## PUNCTION IN TYMPANITIS.

By Professor STEWART, *Andersonian University, Glasgow.*

### CASE I.

IN the 9th vol. of THE VETERINARIAN there is recorded by me a case of intestinal tympanitis relieved by punction. I purpose now stating my further experience of that operation.



The mare upon which I first operated was doing well, to all appearance, for ten or fourteen days after I wrote her history. Subsequently she ceased to improve, and the groom, after awhile, complained that she would not suffer pressure on the right flank when he was dressing her. When I examined it, the tenderness was very apparent; but there was neither heat nor swelling. A stimulating liniment was rubbed in, and some physic was given. Another veterinarian recommended and applied a blister. The treatment produced no amendment. The mare remained thin, weak, and dull, and the tenderness neither increased nor diminished. At last the mare was sold for eight pounds to a person who kept her for awhile, and resold her for ten. I then lost sight of her. I have since been told that she was sold a third time for thirty pounds. The last time I heard of her it was said that she had died; but of what my informant could not tell.

When I last saw the mare I did not think she would ever become useful. There was some mischief going on in the right flank; but whether it had been produced by the trochar, or by gaseous distention, must be left to conjecture. From the beginning of her illness the mare would not lie on her right side; a fact which I mentioned in recording the case.

I have since tried the operation on three other horses, and shall briefly state the results.

#### CASE II.

*Nov. 14, 1836.*—A cart-horse was fed last night about six o'clock, and was shut up while feeding. At four in the morning the carter found him rolling about in great pain, covered with sweat, and very much swelled. He had emptied his manger. Two colic draughts were given; he was bled and clystered, but continued to get worse; and I saw him at half past six. By that time he was dying of enteritis. As an experiment, I punctured the belly. Knowing I should have an opportunity of examination after death, I was desirous of learning whether the perforations of the trochar would close immediately or remain open. I had no doubt but I should evacuate a large quantity of gas, and was surprised, upon withdrawing the perforator, to find it followed by very little gas; so little that its removal could have afforded no relief, had relief been contemplated. I made six other punctures in different places, with no better success. From only one was there any stream of gas; from other two, just enough to shew that the bowel was punctured; from one a few drops of bloody water; and from the others nothing escaped. The canula was probed, but it was quite clear.

Upon dissection, an hour after punction, I found the small intes-



tines where the large ones ought to have been. They were all intensely inflamed; and, except one convolution, all full of air. I could not find all the punctured places. One had entered the flaccid bowel, and it was that which had yielded the gas. The punctures, all that I found, were quite impervious. By compressing the bowel, I could not force any gas through the perforations till I put in a probe, which shewed that the marks I took for punctures really were such. I used a small hydrocele trochar.

From this case it appears that punction is not likely to do any harm; and that, when the *small* intestines are the seat of tympany, punction is not likely to do any good. When much inflated, the small intestines change their relative position, and the gaseous pressure is such as to prevent an easy passage from one convolution to another. It is thus that the trochar empties only one convolution, and one convolution holds so little that its evacuation can produce no relief.

#### CASE III.

*May 23, 1837.*—A draught mare, from the country, became very ill when in town. The belly was swelled all round. She got three strong colic drenches all within forty minutes; she was back-raked, clystered, and bled. She continued as ill, worse she could not become, and was punctured in four different places, but no gas came away, or any thing but a few drops of water nearly limpid. She got another drench and clyster, after which the pain abated. In another hour she was free from pain, and the belly fell rapidly. She was four hours ill altogether. She went home on the third day, and I heard no more about her until five months after, when I was told that she was then in town, quite well, and had been so ever since I had seen her. This case, I think, confirms the two inferences drawn from the last.

#### CASE IV.

*Dec. 24, 1837.*—A draught horse was attacked by colic for the third time since February 1836. He was first observed at half past ten. I saw him at half past eleven.

*Symptoms.*—Evident abdominal pain; belly swelled all round; it measured seven feet in circumference; in another hour it measured eight feet; eructations frequent, or rather constant; pulse about sixty; no passage per anum; staled once; was easier after four draughts; quieter but not easier after bleeding; pain sometimes abated. Pulse at third hour, hard, but still at 60; eye and mouth red. At fourth hour, mouth and eye pale; mouth cold; pulse 90, imperceptible at the jaw; skin wet with perspiration; shrunk from pressure on the belly; no shivering; stood, but appa-

rently in great pain, during the last thirty minutes; and died after five hours' illness.

*Treatment.*—He got, from first to last, seven or eight draughts, containing altogether 12 ounces of ammonia and 24 ounces of a strong pepper tincture. He was back-raked and clystered often. He was bled once, losing about 12 quarts of blood; and he was punctured in four places, once with the small trochar, and thrice with a large one used for cattle. The draughts, all except the last, which seemed to increase the pain, appeared to relieve him more or less. He became easier, but the belly never decreased in volume. The bleeding made him faint; he fell, and afterwards seemed weak, and disposed but unable to struggle. If it did not prevent inflammation, the bleeding did no good; but I am pretty sure that it did prevent inflammation. It blanched the eye and the mouth, and made the pulse soft and weak. Exercise, of which he got a little, did no good; and punction evacuated no air—nothing whatever. The clysters were returned pure as they were given; but the pelvis was so full of the bowels that the rectum would not hold a quart. After death, I made several punctures with the large trochar; from one puncture, made on the right side, between the fifth and sixth ribs, counting forward, a great deal of gas was evacuated; from the others I got little or none.

*Dissection.*—The body was carted two miles, and opened six hours after death. A little gas was found in the abdominal cavity; but whether it had escaped by the openings made before or those after death, I could not tell. The small intestines first appeared. They were all full of gas, and the slightest pressure forced it through the perforations, of which I found several; but I had made many, perhaps fifteen. There was no rupture, no inflammation, no spasmodic constriction. Rupture of the diaphragm is generally found in these cases; but it did not exist here. There was not much food; a little in the colon was very dry, and some quite moist. At the dry part there was a considerable tumour on the intestine. Its apex adhered to the omentum. It weighed nineteen ounces, and in each direction measured twelve inches and a half. It was full of thick yellow matter, lodged between the muscular and mucous coats.

This was a very interesting case; but I have no room for any remarks upon it, nor yet for comment upon the singularly-erroneous doctrines now prevailing and recently expressed regarding diseases of the digestive apparatus. But, perhaps, they are nearly as true as any other doctrines composed in the same way, that is, of old conjectures, three-fourths, and of new conjectures, one-fourth.

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## HYDROCYANIC ACID IN TETANUS.

*By Mr. HARRY DAWS, V.S., London.*

*Jan. 1, 1839.*—A brown gelding, aged, belonging to Mr. Matthews, was received into my hospital with sympathetic tetanus. Every muscle was rigidly contracted, and his jaws firmly closed. The pulsations were 30 in a minute.

I had determined, on the first fair case that occurred, to try the effect of the hydrocyanic acid; but I first gave an ounce of the tincture of croton, mixed with his water, and which he readily drank. Some time afterwards I administered half a drachm of the hydrocyanic acid (Scheele's) in a pint of warm water, as an enema. No visible effect was produced.

Half an hour having elapsed, I injected a drachm of the acid in the same quantity of water. In ten minutes his respiration became quickened and sonorous, and the pulse rose to 90 beats in a minute. There was a tremor of every limb, slight perspiration, and relaxation of the muscular fibres to so great an extent, that the poor animal ate a linseed mash with avidity. In the course of half an hour, however, he relapsed into his former state.

*2d.*—In the morning and at night I repeated the acid, and in the same dose. The results were precisely the same. There was total relaxation of the spasm for half an hour, but the rigidity of the muscles gradually returned.

*3d.*—The bowels were relaxed, probably from the influence of the croton. I now doubled the dose of the acid, and injected two drachms of it, in the same quantity of water, morning and night. The relaxation of the muscles was more rapidly and extensively produced, but, after awhile, the rigidity returned.

*4th.*—The owner insisted on his destruction, in spite of my entreaties to the contrary. I determined, however, to give the acid another trial before our patient received the fatal blow, and I injected four drachms of the acid. In less than one minute it began to operate violently. Every hair stood on end, and the animal staggered forward, and fell in the corner of his box. A profuse perspiration bedewed his whole frame,—his respiration was too quick to be counted—his pulse small, almost imperceptible, and scarcely to be counted. He remained a few minutes in this state, and then he gradually recovered—got up—voided both dung and urine, and drank freely of cold water. In fact, he exhibited all the symptoms of returning animation after syncope occasioned by depletion. He recovered so far as to neigh two or three times. All these promising appearances, however, soon passed away—he



relapsed into his former condition, and his muscles were as rigidly tetanic as ever. He was destroyed in the evening, and buried, no post-mortem examination being allowed to take place.

I am certainly inclined to hope something from the exhibition of hydrocyanic acid in tetanus, and I will avail myself of the first favourable opportunity to put it fairly to the test. I should be inclined to try the effect of small quantities of this powerful medicament. I would not exceed a drachm, injected twice or thrice in the day, in a small quantity of tepid water, the rectum being previously cleared of all fæces.

I would not irritate my patient by forcing him to swallow any medicine; for he will generally drink water with the tincture of croton in it, if he cannot get any thing else. Counter-irritants, as rowels, setons, blisters, &c., I would altogether avoid. Quietude, warm clothing, and fresh air, I should deem indispensable.

Should the disease arise from any external injury, I should deem palliative treatment of the affected parts far preferable to any stimulants.

## A CASE OF SUCCESSFUL TREATMENT OF DISLOCATION OF THE CERVICAL VERTEBRÆ IN A HEIFER.

*By Mr. J. W. IONS, V.S., Waterford.*

A HEIFER, belonging to Sir John Bautry Jones, of Mallinabro, near Waterford, was brought to me in the beginning of last May, on account of an injury in the neck, which she had received in the previous week. Her head was completely turned round to the off-shoulder, and the eye partially paralyzed. I almost despaired of the case, but was anxious to try what could be done.

I commenced, assisted by my son and apprentice, with endeavouring gently, yet forcibly, to bring the head back into its natural and straight position, and we had the satisfaction of hearing the bones jerk into their proper places. We then took a wide horse-girth, and buckled it tightly round her body, and on either side of this we sewed some strong pieces of leather, six inches square. A strong leather strap was then buckled round the horns, from the sides of which were firmly attached two tough pieces of ash, such as we use for twitches, the other ends being fastened to the leathers which were sewn to the roller on each side.

There was a very large swelling on the off side of the neck, at the situation in which the dislocation had taken place. I passed a seton from above, downwards, through the whole extent of it; and ordered it to be bathed four or five times in the day with a



solution of nitre. The near-side stick was 2 feet 11 inches in length, and the off-side one 2 feet 8 inches, and by this simple contrivance we were enabled to keep her head perfectly straight. Some degree of fever supervening, the bowels being rather constipated, and a cessation of rumination having taken place, the following drink was given—Glauber's salts, 8 oz.; nitre, half an ounce; and ginger, a drachm; and this being repeated on the following day, the desired effect was produced—the dung became pultaceous, the fever abated, and rumination commenced. From her present appearance, I shall discharge her in two or three days.

I had a similar case in a mare belonging to Dr. Conolly, of this city—the kind attention of this gentleman to my son's case I shall never forget. I had more difficulty in reducing the dislocation, and retaining the vertebræ in their natural position, but I eventually succeeded. The medicine which I gave the mare in order to subdue a certain degree of fever which accompanied the case, consisted of 2 drachms of aloes, 1 of digitalis, 3 of nitre, and 2 of emetic tartar.

With much pleasure I announce to you the perfect recovery of my son. A small farcy bud formed over the right eyelid, which was opened and dressed with creostote daily. Healthy granulations were soon produced—the wound healed—and the patient is as well as he ever was. We are indebted for this to the information which we derived from THE VETERINARIAN.

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[M. Hurtrel D'Arboval has just published an enlarged and improved edition of his "Dictionary of Veterinary Medicine and Surgery." It now consists of six very closely printed volumes, of 700 pages in each. It is become an exceedingly valuable and almost complete Encyclopedia of French veterinary practice. We shall, as occasion may serve, review certain portions of it. His remarks on dislocation of the cervical vertebræ will be new and useful to many of our readers, and may enable them to form a tolerably accurate opinion of the execution of the work. He had been speaking of dislocation of the ribs, and he thus continues:—

"The vertebræ of the neck, possessing a much greater degree of suppleness and mobility, are more susceptible of luxation—an accident always serious, generally mortal, and necessarily so when the luxation is complete, for it then supposes and involves in it an entire displacement of the articular surfaces—a cessation of the connexion which exists between them in their natural state—a rupture of the ligaments which unite the vertebræ together, and a serious lesion of the spinal marrow. If the two central canals of the displaced vertebræ are no longer in correspondence, it will necessarily follow that the spinal marrow will be compressed and

crushed; and the parts beyond this lesion, which receive their nervous influence from the spinal cord, will necessarily be paralyzed. The almost unavoidable consequence of this will be death, or the cure will be so long in effecting, so uncertain, and, after all, so incomplete, that the veterinary surgeon who undertakes it will scarcely do right, as it regards his employer or himself.

We can easily judge of the extreme violence which is necessary in order to separate two osseous surfaces so intimately united as those of the cervico-vertebral articulations; and we are authorized to conclude, that if there is not already fracture, compression, or crushing of the spinal marrow, and, consequently, paralysis, one or the other of these lesions will inevitably occur in the violent efforts which we are compelled to make in order to restore the bones to their normal situation. Doubtless, luxation of the cervical vertebræ is not impossible; but it is much more rare, and seldomer demonstratively proved, than some veterinarians have imagined, who have mistaken for it a muscular extension, more or less violent, caused, perhaps, by sudden and determined efforts to make the horse carry his head in some peculiar or fanciful way, or to cause it to be outrageously extended or flexed. Supposing that, from one or another of these causes, luxation has really taken place, and is extended at once to two articulations of the vertebræ, life will be inevitably extinguished in an instant. Life will be less compromised, if one of the two oblique apophyses should be separated from the articular surface which corresponds with it, and the injury is limited to this, for the displaced vertebra will elevate itself a little, and the spinal canal will be scarcely contracted. This accident would be recognized by the acute pain which the animal feels at the slightest touch of the part, or attempt at exploration of the nature and extent of the accident, and especially by the abnormal situation of the head, which is directed to and remains fixed on the side opposite to the seat of injury\*. In such cases, prudence would counsel the practitioner to abstain from the least effort to restore the head and neck to their proper direction, for the animal would instantly fall and die. All that can be done, if there is any wish to attempt to save the animal, is to endeavour to calm the local pain, and prevent irritation, by rest, and bleeding, and other measures of a similar tendency.

We will not content ourselves with citing numerous cases of luxation of the cervical vertebræ: it is more satisfactory to have them reduced and cured. But in many of the cases in which some of the vertebra are supposed to be dislocated, has this been actually the case, or may we not refer to an account given by

\* This was precisely the case with Mr. Ion's heifer; but the advice that follows was contradictory to his experience.—Y.

Gohier, as an illustration of what these cases generally are? A gelding was brought, having his neck bent to the left at the middle—a little inclined downwards, and firmly fixed in this position. The animal could neither lift it, nor straighten it, much more bend it towards the right. He never lay down, and if it was attempted to straighten the neck, or to elevate the head, the animal immediately backed, and threw himself down if the attempt was persisted in. The accident was occasioned by his being entangled in the halter during the night.

Having uselessly attempted various means to reduce the supposed dislocation, a mechanical contrivance was at length resorted to. A power was employed to act on the dislocation, in a direction contrary to that by which it had been caused. The convex projection of the neck was brought against a post, strong and well fixed, and the horse was fixed in this position by various halters. A strong halter was then attached to the head, and the grooms were directed to pull equally but firmly, so as to bring back the head, if possible, into its natural direction. Having succeeded in this, they maintained the head and neck in this position for several days, by means of splints securely bound on each side of the neck.

A similar case of this *incomplete luxation* was published by M. Rebel, in 1825. This accident likewise resulted from being cast at night. The mare being tied to the rack at night, had contrived to entangle one of her fore-legs in the head-stall, and had got partly up, and fallen down again several times. She was found lying on her right side, her head and neck supported by the wall, and which had bent them upon each other. M. Lebel did not see the animal until the next morning, when he found her in the following condition:—The neck deviated considerably from its natural direction, and described a curved line with its convexity to the right. The vertebral column presented on its concave side a little depression, not unaptly represented by the union of two lines forming an obtuse angle, and indicating the precise spot of displacement. The muscles of the trachea and neck generally followed the direction which this luxation forced on them. The head was depressed—the right eyelid and the muscles of that side of the face were swelled. The neck, still to a certain degree under the guidance of the will, easily changed its direction, but it was the whole of the neck which moved, its curious curved appearance still remaining. The animal expressed considerable pain when his head was lifted up or drawn to the right; and if he was attempted to be backed in this way, he soon escaped from the grasp with considerable violence, and the neck suddenly assumed its semicircular form. The swelling of the neck not permitting



any reduction, M. Lebel was at first content with bleeding, and reducing the food, and rubbing some emollient ointments on the part. After awhile, however, he had recourse to an apparatus proposed by M. Gohier, and of which the description in the foregoing case will give some idea. After taking the convex projection of the neck as his *point d'appui*, he drew the head forward, and raised it, and he thought that he had perfectly succeeded, when, after some manipulation, he heard a decided crepitus. The articular surfaces seemed to have assumed their natural relative situation, but they did not preserve it for a moment; and when the neck was for a moment left unsupported, while fitting on the bandages, it resumed its former unnatural position. The application of this apparatus could not be long continued, whether it was from the pain which it occasioned, or the impatience of the animal. Nevertheless, on the following day, and although the neck had again resumed its unnatural direction, the animal was sensibly better, and, what it had not been able to do before, lifted its head to the rack in search of food. The cure was then left to nature, and in less than two months from the date of the accident, she was perfectly well, and not the slightest deformity remained in any part of the cervical region.

These facts, related by Messrs. Gohier and Lebel, do they establish the doctrine of incomplete luxation of the cervical vertebræ. We very much doubt it. We rather think with Mr. Rebel that, in these cases, it is only a question of simple torsion of the neck, proceeding from spasmodic contraction of the muscles of the concave side,—a contraction which, in aggravated cases, might be able to disjoin the articular surfaces of the vertebræ. We will not repeat our reasons for this opinion: we will only say, that it has been demonstrated by various post-mortem examinations, and particularly by those of that regretted Professor, Gohier, that the horses which have veritable vertebral luxations, uniformly die in consequence of the lacerations which are produced, while, in the other cases, which have little resemblance to the former, the patients get well. The bulk of the vertebræ of the neck of the horse—the manner in which they are indented with each other—the peculiar intimacy and strength of their union, leaves no manner of doubt that luxation of these bones could not be accomplished without inevitable death—either immediate or under the form of universal palsy.

Another case is on record of incomplete luxation of the cervical vertebræ in an ass, the consequence of being cast in the night. The neck was bent inferiorly, and to the right. Proper bandages were with great difficulty applied; but the animal completely re-



covered, notwithstanding an inflammatory enlargement at the upper part of the neck, which made it necessary to remove the bandages sooner than was intended.

A very interesting case is recorded by M. Godine in the "*Journal de Med. Vet.*" A horse, nine years old, was pronounced to be incurable by a farrier; and, afterwards, by a veterinary surgeon. Before, however, he was sacrificed, the proprietor determined to consult M. Godine, jun. This gentleman found the poor patient in the following situation:—He lay on his right side, motionless—his head turned to the left—and the skin covered with a cold sweat. The head, nostrils, and lips were œdematous, and swollen to an enormous size, as if the animal had been strangled. The odontoid apophysis—the conical bony protuberance on the superior portion of the body of the second cervical vertebra—had sensibly deviated to the right, and formed a projection on the superior part of the right wing of the atlas—the cervical ligament at this point a little bending towards the right—there was spasmodic contraction both of the right and left cervical muscles, producing immobility of the neck. The horse sighed on the slightest pressure of the part, and the respiration was laborious and hissing.

He had been cast in the night, and, after many useless efforts to disengage himself, and in which he had been thus bruised, it seemed that he had fallen on his head with his neck bent under him. In this situation he was found by the coachman, at seven o'clock in the morning. The halter was cut, but he made no effort to get up; and his only movement was that of breathing. He was bled, and still he lay thus far motionless. The farrier who bled him declared that there was no hope of saving him; and a regimental veterinary surgeon was of the same opinion. M. Godine, however, judging from the continuance of the breathing that the luxation was incomplete, would not totally abandon the case. He raised him by means of pulleys, and the voluntary motion which ensued assured him of the integrity of the spinal cord. He then offered the patient some gruel, which he drank as well as the engorgement of his lips would permit.

On the following day, after using an almost incredible degree of extension, M. Godine fancied that he heard a noise as if the polished head of the bone had again entered its natural cavity. The horse got up and walked about, but staggered as he walked, and was apparently much incommoded by the weight of his head. By the use of various means, however, and a blister among the rest, the horse perfectly recovered.

Hurtrel D'Arboval quotes, at considerable length, from the "*Recueil*," to prove that there was not any luxation, properly speaking; and he confidently adds his own opinion to that of the

reviewer, that there can be no real and proper luxation of the cervico-vertebral bones, without almost instant death to the animal, except, indeed, instant aid, and that is almost impossible, is afforded. We confess that this is likewise our decided belief. There is no instance, so far as we are aware, either in human or veterinary surgery, in which luxation, by violence, between the first cervical vertebræ and the occipital bone has occurred. M. Godine stands alone with regard to luxation between the first and second vertebræ. There was considerable tumefaction of the part—and, without this, there was the *obliquus capitis inferior* covering and laterally closing the articulation, and rendering the exploration of the part, and the decision as regards the luxation, almost impossible. If, however, such a luxation should take place, we can hardly conceive of it as being otherwise than fatal. The spinal canal will be too much diminished at the point of luxation, and the spinal marrow fatally compressed. It does not follow that dislocation at either of the five last of the vertebræ should be fatal; the vertebral canal might not be so far lessened as to cause immediate death. Yet there must be rupture of the ligamentous bands, which can hardly consist with the future free and perfect action of these joints, or which would not, in the great majority of instances, be attended with a degree of inflammation, almost necessarily propagated to the spinal canal. With the mass of muscle surrounding them, we can hardly conceive of the possibility of sufficient power being applied to reduce such a dislocation. Of anchylosis there are numerous instances; but we do not remember to have seen one case of luxation which continued unreduced. True luxation of the cervical vertebræ would generally, although not invariably, produce death; at all events, it would not yield to our inefficient means; and, least of all, would it admit of spontaneous cure. They are spasmodic affections of the muscles of the neck, fearful while they last, and easily mistaken for dislocation; but at length yielding to proper medical treatment, or disappearing of themselves.

Y.

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#### VETERINARY COLLEGES—PHILADELPHIA, ALFORT.

A LITTLE pamphlet, containing an "Address of the President and Fellows of Rittenhouse College," in Roxborough Township, Philadelphia, to the public, was presented to the Veterinary Medical Association by Dr. Browne, of Philadelphia, through the medium of the President.

This college was formed for instruction in all the departments of literature and science, but, to the credit of the Governors, there is now attached to it a separate department for teaching, theoretically and practically, the following branches of useful knowledge.

1. The different *species* and various *races* of the domestic animals—their different breeds—the uses to which each breed is applicable—the useful *crossings* of breeds, and the most economical and best methods of *producing*, *rearing*, and *feeding* each class and breed.

2. The breaking, educating, training, and fattening certain domestic animals.

3. *Commercial Jurisprudence* as regards domestic animals, including the uses to which they can be applied to the best advantage, their *flesh*, *hides*, *offals of their hides*, *tallow*, *hair*, *wool*, *horns*, *teeth*, *hoofs*, *entrails*, *blood*, and *bones*.

4. The study of the outward forms of domestic animals, their *beauties*, marks of *strength* and *speed*, their *defects*, the indications of their *age*.

5. The *internal structure* of domestic animals—their *anatomy*—their *comparative anatomy*, and the most humane and economical methods of making use of their *strength* and *speed*.

6. The various *foods* used for the nourishment of different domestic animals—the different methods of *raising*, *curing*, and *preserving* them with the utmost economy, and in the greatest abundance.

7. The various medicines required for domestic animals—the most approved methods of *raising*, *curing*, and *preserving* those that are *botanical*—a general knowledge of those that are *mineralogical*, together with the manner of *mixing*, *preparing*, and administering both.

8. The most effectual methods of *preserving* domestic animals from *disease*, and curing those that *contract disease*, together with the methods used to prevent contagion and infection.

9. The *accidents* and *injuries* of domestic animals, and the *surgical operations* that are required.

10. The most approved methods of *shoeing*, either generally, or when the animal is diseased or lame.

In order to teach these things effectually there is an agricultural inclosure of considerable extent—a botanical garden—a theatre for lecturing, a museum, a library, a dissecting room, a forge, hospitals, sheds, &c. The whole under the management of one Director Professor—four other professors, namely,—of anatomy, botany, chemistry and pharmacy, and pathology, surgery and farriery; four teachers, one head farrier, one librarian and attendants.

This, indeed, is erecting a veterinary school on a noble founda-



tion. That it may fully answer the expectations of those to whom it owes its birth, is our ardent wish.

Another pamphlet was presented by the same gentleman, entitled "An Essay on the Veterinary Art, setting forth its great usefulness, and giving an account of the Veterinary Colleges in France, and exhibiting the facility and utility of instituting similar schools in the United States, by Peter A. Browne, LL.D.," published at Philadelphia. This gentleman gives the best account that we have seen of the French veterinary education. The construction of the different veterinary schools is a matter of great interest, copious extracts are therefore made from the history here given; especially as very few of our members will have any opportunity of seeing this American pamphlet.

The school at Lyons lays claim to the greatest antiquity, having been founded by Bourgelat, in 1763. In the year 1766 that at Alfort was established by the same patriotic individual. The school at Toulouse was opened at the restoration of the Bourbons. The students at Alfort belong principally to the departments of the north of France: those of the south are divided between Lyons and Toulouse. The present number of pupils at Alfort is nearly 300; there are about 150 at Lyons, and the same number at Toulouse. The object of instituting the school at Toulouse was the improvement of the medical treatment of oxen and sheep, oxen being more generally employed in agriculture and road-work in the south of France than in the north. The study of the diseases of the horse is not, however, neglected there.

The professors are more numerous at Alfort than at either of the other schools, the buildings are larger, and the grounds are more extensive. There is a kind of experimental farm attached to it, on a scale large enough to cultivate all the plants employed in the nourishment of domestic animals, as well as all those that are used medicinally.

Every school has a *Director*, who is ordinarily chosen from among the professors, and who *ought* to be a veterinarian; but there are occasional exceptions to this, as in the present Director of the school at Lyons.

The college at Alfort contains:—

1. A Professor of Veterinary and general Anatomy, who likewise gives instructions on the exterior forms of domestic animals, and their beauties and defects.
2. A Professor of Natural History, as applicable to the veterinary art, zoology, comparative anatomy, and vegetable physics.
3. A Professor of Chemistry and Pharmacology.
4. A Professor of Pathology, whose duty it is to teach the dis-

eases of brute animals, and the best modes of cure. He has also the charge of the *police health* of the establishment.

5. A Professor of Veterinary Surgery, who, beside the oral lessons which he gives, is obliged to perform, in the presence of the students, every operation which the veterinary patient may by possibility need. He also gives lectures on farriery, and on veterinary jurisprudence.

The Director delivers lectures on the art of educating and breeding domestic animals. He also has the charge of the study of the breeds of animals, and points out to the student where the crossing of different breeds is attended with advantage or the contrary, according to the different uses to which the animals are to be applied.

Each Professor has an assistant, whose duty is to repeat the leading points of the lecture and the experiments and operations, and also to examine the students.

In order that the students may always have subjects for instruction, sick animals are received into the infirmary at very low prices. A sick horse costs the owner two and a half francs, or two shillings and a penny, per day, and sick dogs only sixpence a day.

There is a foreman or superintendent belonging to the forge, whose duty it is to attend to the forge, and to give instruction to the students in Farriery. For this purpose the pupils are assembled by sections. There are eight furnaces, with each a bellows, so that sixteen students can work at the same time. They are successively replaced at intervals, according to their respective numbers. In a shed belonging to the forges, there is a long bench, to which the feet of dead horses are fastened, and upon these the students practise the art of Farriery in the first instance.

The duration of the studies is four years. One of the professors informed me, that in practice four years had been generally found to be too long. About half the time, but certainly never less than that, would, except in cases of great idleness or stupidity, be enough.

The studies are as follow :—

1st year. Osteology; Myology; Natural Philosophy; the exterior of Animals; Vegetable Physics and Botany.

2d. Splanchnology, not confined to the abdomen, but extending to the other cavities of the body; Chemistry; Veterinary Botany, and Pharmacology.

3d. Veterinary and Comparative Physiology; the first part of Pathology and Surgery.

4th. Veterinary Jurisprudence; Public Health, or Sanitary Police; the second part of Pathology and Surgery, and the breaking and education of domestic animals.

The students of the third and fourth years are, during the spring, exercised in the practice of surgical operations *on living animals*.

There are two general examinations every year, and each year's study has attached to it a first and second prize. The students of the fourth year, who are found to be capable, receive a *diploma*. If a student is found deficient in any year's study, he is obliged to renew the study of that year, therefore, those that are idle may be detained eight years, and even then not receive their diplomas. If they are found deficient on two successive years, they are sent away from the school. Students are received into the College in different ways.

1. By paying their entire expenses. These are called "Entire Pursers."

2. By paying half their expenses, the other half being paid by the government, under the direction of the Minister of Commerce. These are called "Royal Half Pursers."

3. A certain number of either half or whole pursers are ballotted for annually by the general council of the several departments. These are called the "Department Pursers."

4. Certain learned societies pay for a certain number of whole or half pursers, for instance, the Royal Society, and the Royal and Central Society of Agriculture.

5. There are also students, all whose expenses are paid by the Minister of War. They are the sons of military men, and are subjected to particular conditions. They contract to serve for eight years, four in the school, and the remaining four years as veterinary surgeons in the different regiments of cavalry. If they do not obtain their diploma in four years, they are compelled to serve the other four as common soldiers; and, if required, to repay the expenses uselessly incurred in endeavouring to teach them.

In order to be admitted, the candidate must be at least sixteen, and not more than twenty-five, years of age. He must write a legible hand, and must possess such a knowledge of the French language as to enable him to write correctly from dictation.

The expense to the student who pays the whole fee is about £56 per annum, including board.

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### CONSULTATIONS. No. 3. (*continued.*)

#### A SINGULAR DISEASE IN CALVES.

Sir,—I HAVE just read in the last number of THE VETERINARIAN the account of a singular disease among calves, on which you have been consulted; the reading of which has suggested to me



some queries, which I shall feel particularly obliged by your answering. What is the difference between this disease and *rabies*? An account is given of the stupidity of these patients—the loss of appetite—the grinding of the teeth—the frothing at the mouth—the coldness of the extremities—the irregularity of action—the movement in a circular direction—the ferocity of some of them—the comatose and paralyzed state of others—the suffusion of the eyes—the irregularity of the action of the muscles of the eye-ball—the increased temperature of the head, and death in a few hours.

Now, what, I ask, are the symptoms by which I am to distinguish this disease from *rabies*, and what was the difference in the post-mortem appearances? Had there been any mad dogs in the place, or had the animals been bitten?

THOMAS MATHER, *Douglas, Lanarkshire.*

#### REPLY.

Mr. Mather's questions certainly deserve serious consideration, although I must frankly confess that, when I was pondering on the nature and cause of this mysterious disease, the possibility of its being one of the varying forms of *rabies* never occurred to me, nor can I now recognise in it any of the usual characters of *rabies*. There is considerable affection of the brain, but, as in sheep and in cattle, it has a local habitation, although not a peculiar name. The pressure, from whatever cause it may arise, has a tendency to one side of the brain alone; the animal goes round and round, the seat of pressure being the centre of the circle. Here is one of the distinguishing symptoms respecting which Mr. Mather inquires. This circular motion is characteristic of compression of the brain, and tells us at once that there is no *rabies*. This nameless disease likewise runs its course far more speedily than *rabies*. The first calf was not ill more than twelve hours. There is, at no time, either the eagerness for, or the dread of, water, which almost invariably accompany the different stages of *rabies* in cattle. No mention is made of the watching of imaginary objects, nor the peculiar bellowing or moaning which attends the termination of these fits of aberration of mind, nor the vitiated appetite which accompanies the early or later stages of *rabies*. On the other hand, we do find a grinding of the teeth—a coldness of the extremities, and an increased temperature of the head, which we have not been accustomed to look for in *rabies*, or to be symptomatic of it.

As to the post-mortem appearances, I speak of them with considerable hesitation, for I really do not know what they should be in calves. I should expect inflammation of the pharynx, the larynx, or the œsophagus, the mucous membrane of the fourth

stomach, and the serous lining membrane of the heart, with slight injection of the membranes of the brain, but not of its substance. Here was considerable injection of the membranes of the brain, and complete congestion both of the brain and heart.

Y.

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#### No. IV.

##### DEAFNESS IN A HORSE.

ABOUT four weeks ago I was consulted with regard to a colt, four years old, which, while being broken, had become deaf under the following circumstances. He was intended as a roadster, and to be used in the moors during the shooting season; and, after he was sufficiently quiet and steady, to ride; he was trained to stand fire, by firing from his back; and had become so steady that the breaker thought he might fire a fowling-piece between his ears, which he did, and was astonished to find, immediately afterwards, that the horse was quite deaf. He had previously been trained to come to or go from the breaker at the word of command, and to move round in the stall, &c.; but after that shot was fired he took no notice, however loudly he was called to, or only moved by signs, or when led.

I suggested bleeding, physic, and fomentations at the roots of the ears; but the subjoined letter shews that they were not required. Although a case like this may not be uncommon in the army, it is sufficiently so in private practice to deserve notice.

W. D.

May 18, 1839.

Sir,—I PROMISED to acquaint you with the result of the deafness of my young horse, which I mentioned to you when at Edinburgh. On my return home I found that he could hear a little, and, therefore, I did not consider it necessary to use any of the means which you suggested, and he has gradually come to hear quite well again. He was entirely deaf for four days, and it was about a week before his hearing was perfectly restored. I have delayed writing to you, in order to observe whether there would be any recurrence of the deafness, and I am happy to say that there is no appearance of it.

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#### No. V.

##### PARALYSIS OF THE PELVIC VISCERA.

Dear Sir,—YOUR advice with regard to the subjoined case would confer on me much obligation. On the 21st of January, the

ostler of a yard of which I have the veterinary management informed me that one of the horses did not stale freely. I gave him a diuretic ball, and in two days he was at his work again, and continued so until the 1st of April, when he was sent to me in the same state as before. I gave him another ball, and he continued well until the 9th instant, when I was told that he was unable to void his urine, and was otherwise ill. I examined him per anum, and found that the rectum was filled with hardened fæces, and his bladder distended with urine.

*May 22d.*—He has had no power to discharge either the fæces or urine since the 9th, and I have emptied the rectum and bladder every day, and given him aloes and ginger every second day, and clysters containing aquæ ammoniæ ʒi, and have applied a blister along the whole of the sacrum. The pulse is 38, and the horse feeds as well as he ever did. Your kind reply, &c.

#### REPLY.

THE case with regard to which you consult me is a rare one, and especially as unconnected with paralysis of any of the neighbouring viscera. You say nothing about the supposed cause of this affection, nor do you tell me the present condition of the animal. Has he met with no injury about the sacrum?

So far as I can understand the case, and supposing him to be in tolerable condition, I should be disposed to bleed, and to give a dose of aloes likely to purge him. I would extend the blister somewhat farther along the loins, and give large quantities of warm water in the form of enemata, and I would also inject a small portion of spirit of turpentine in tolerably thick gruel. Fomentations applied to the perineum may be useful, as may also moderate exercise. Examine through the rectum, whether there is not some tumour forming at the origin of the sacral nerves, or in their course. Soft food and spare diet will be adviseable. If there is any tumour, iodine—the hydriodate of potash—must be tried in doses of one or two drachms daily. Let me hear how you succeed.

Your's truly,

W. DICK.

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#### No. VI.

#### SUSPECTED GLANDERS.

May 31, 1839.

Dear Sir,—I ENTREAT your advice respecting a case which has annoyed me not a little. A mare that has passed under my hands has been returned and declared by two veterinary surgeons to be



glandered. She had a cold when the person to whom she is now returned bought her about fourteen months ago. The discharge from the nostril had [not quite left her when he sold her again, eleven months afterwards. She has been getting nothing but straw, and, of course, is in bad condition, her coat staring, her breathing oppressed, and it seeming as if there was some obstruction in the nasal passages. The membrane of the nose was somewhat redder than usual, but there was no ulceration, although, at times, a watery discharge.

What is most remarkable, there is a constant discharge of every kind of masticated food on which she is fed, and if she is trotted smartly, although but a short distance, she discharges a considerable quantity of this, and sometimes, pieces as large as a common laxative ball. She seems very anxious to clear her nostrils, sneezing with might and main, and making the half-masticated food fly in all directions. She may, afterwards, be ridden all day without discharging any more, but when allowed to stand and eat, and on starting afterwards, she is as bad as ever. Otherwise she seems to be in perfect health—there is not the slightest heaving at her flanks, and, however hard she may be ridden, it makes no alteration.

Mr. Forbes told me that before he sold her he gave her a ball, and he thought she had swallowed it; but, about an hour afterwards, as they were leading her out, he saw the ball discharged from her nostril. I have given her a dose of physic, and am going to-day to see how the case is proceeding.

8 P.M.—I have seen the mare; she had just had a feed of bran and chaff, when I ordered her to be brought out of the stable. There is a constant discharge of watery fluid mixed with masticated food. It falls from the nostril drop after drop until she gets a ride, and then she clears herself of all of it. The submaxillary glands are not in the least enlarged, or adherent to the jaws.

You will much oblige me by favouring me with your opinion of this singular case.

#### REPLY.

The case which you mention is one of those which, you will recollect, I used to refer to in my lectures as likely to be mistaken for glanders, but which is quite distinct from that malady. It is connected with disease of some of the molar teeth, or the alveolar processes, or the velum palati. I have seen appearances very similar arising from the velum palati having been pierced in giving balls at the end of a sharp-pointed stick.

If you will carefully examine the mouth of this mare, you will

find that there is somewhere an opening from it into the nose. I am unable to write with greater precision, as you have not mentioned whether the discharge is from one or both nostrils. You will, perhaps, be compelled to cast her before you can see and feel the parts properly; but of that you must judge. I am afraid that you will not be able to do much good, farther than to save the parties some trouble, or to prevent a law-suit—that, however, will be something. There can be little prospect of cure, as the orifice will have assumed a fistulous character, which will be kept up by the constant passage of the food. If there is a carious tooth or piece of bone, it must be removed, and, probably, the parts frequently cleaned with a syringe. I do not know of any other means of cure.

W. D.

## ON THE PROFESSIONAL ARRANGEMENTS OF SOME VETERINARY PRACTITIONERS.

*By Mr. W. J. T. MORTON, Royal Veterinary College.*

A GROWING evil exists in the profession, connected with which fresh facts are coming to my knowledge almost every day; and feeble though it be, I will raise my voice in condemnation of it, although I may, as I know I shall, inculcate many of my friends. I allude to the circumstance that many members of the profession, instead of taking youths of education and respectability as apprentices or assistants, employ their grooms or smiths for the purpose of compounding and administering their medicines, and performing the minor operations of surgery, as bleeding, &c. I am sorry to be compelled to say, that many to whom the profession, as a body, has a right to look to for a different and better example, are guilty of this.

When arguing the point with them, as I have often attempted to do, I have been met with the remark, that their groom does not know the nature of the disease under which the patient is labouring, and, consequently, he learns nothing. How short-sighted a view is thus taken! Cannot inquiries be made; nay, are they not made? Is there not frequently a selfish cunning about these characters, lifted as they have been out of their situation, and having confidence placed in them which is too often abused, to institute these inquiries, and to observe and treasure in their memories many important facts?

Far be it from me to blame any one for endeavouring to advance himself in life. I rejoice to see the man who, by his indus-

try and talents, lawfully employed, has raised himself to a superior and respectable station. It is the ignorant man, and the mere pretender, I speak against: he who assumes to the possession of that which he has not, and who with a little knowledge becomes puffed up with self-conceit, and then adds to this the blackest of all crimes,—ingratitude to his employer.

I confess I was somewhat amused with the remark of one friend, who told me that, although his smith compounded his medicines—shame on it that this should be thought an employment worthy only of such men!—he never gave them to his patients, this being done by his groom; and so they were prevented from becoming conversant with the treatment of disease! “What!” said I; “and cannot these your servants confer together in the evening; and think you that they do not, and make pretty free strictures, too, on your plan of treatment, and the amount of your knowledge?”

And what is the result of this? conceit engenders folly, and, knowing little, they think they know much, and on the first and most trifling event which takes place at which they are displeased, perhaps on your pointing out to them a neglected duty, they quit your service, and commence the practice of a profession which demands the application of some of the noblest powers of the mind. This they are altogether ignorant of, and, conceiving it to be a merely mechanical art, and actuated only by a love of gain, they have recourse to the lowest means in order to accomplish their purpose; thus disgracing themselves and the profession whose name they have assumed.

What is the remedy for this growing evil? it is as simple as it is plain. Let veterinary surgeons take youths of education and respectability as apprentices for a limited period—certainly not less than three years,—and by inculcating right principles, the object will be at once gained. Let not the fear of opposition prevail. Competition, to a greater or less degree, must exist, and that which is honourable has nothing in it to cause dread or apprehension; while that which is dishonourable, although in the end it may meet with its reward, yet during its existence fails not to create unpleasant feelings, to say the least.

An instructor and his pupil are bound by ties very different from those which unite a master to his servant, although between these there is a reciprocal duty which the rightly instructed will never lose sight of; yet, I repeat, that the instructor and his pupil are bound by ties of a stronger and more lasting character. As years pass on mutual confidence is engendered, which never should be violated; and a friendship springs up which should never be broken, and which never will, if the conduct of both be what it ought.



Now, it may be, and often is the case, that the interests and connexion of the apprentice induce him to commence business in the town in which his preceptor lives; and, why should he not? Yet surely this ought not to lead to any disagreement. But, should it unfortunately be the case that opposition arises, I fearlessly assert, that there is less to be apprehended from it, than from that to which I have previously adverted. Education, and a knowledge of the relative position in which each has been placed, will prevent any other than a gentlemanly deportment. Thus have I ventured freely to offer my views on a subject which seems to me to merit notice.

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### A SINGULAR DISEASE OF THE SPLEEN IN CATTLE.

*By Mr. JAS. HAYES, of Rochdale.*

I SEND you some cases, and remarks thereon, of an affection in cattle similar to those related in the May number of THE VETERINARIAN, by Mr. Cartwright. I have, in the course of my practice, met with many cases which, from the similarity of their symptoms, and their effects being so much alike, I have been induced to believe proceeded from the same or from very similar causes. I have had the opportunity of making no fewer than six post-mortem examinations of these cases within the last year.

The general history is as follows:—The disease seems to appear at very indefinite periods—from one month, to seven months after parturition. The first thing observed by the cowherd is a rough and unkind appearance of the coat, but with no impairment of the appetite, and there is a little fulness of the abdomen on the left side. In the course of a day or two the secretion of milk lessens very much,—there is a painful stiffness in the animal's gait, with trembling and wambling of the hind quarters, and projecting curvature of the spine. She is often voiding a black shining mucus from the anus, or, as Mr. Cartwright very aptly describes it, a "tarry matter." It seems in appearance to differ from tar only in not being quite so tenacious. In a day or two after this discharge has appeared the debility has fearfully increased,—she staggers and falls, and struggles hard to rise again,—fits now ensue, and in less than an hour after she fell she expires in the most violent convulsions.

Four cows belonged to a very respectable employer of mine, who keeps a considerable dairy. I was sent for to examine them after death, they having died before the cowherd was aware that anything of consequence was amiss with them. They stood in separate stalls, and some of them in separate buildings. Two of them

had been lately purchased. On opening the abdomen, the rumen, the reticulum, and the maniplus presented no unusual appearance, but the abomasum was filled with a fluid of the strangest description. It seemed as if a quantity of blood and bile and chyme and mucus was mixed together, exhaling an odour of the most foetid character. The whole of the small intestines was filled with this strange compound; but here and there floated in it large clots of coagulated black blood. As we traced the different intestines, all this seemed to be more and more amalgamated together, until in the rectum, and a little way above it, the intestines were filled with "a black tarry matter."

The mucous membrane of the intestines was stained with this adhesive fluid, and, here and there, studded with patches of a blacker colour. The mesentery was also covered with large patches of black blood—the lacteals were turgid almost to bursting, and, at the superior part of the mesentery, was a cyst or tumour containing a pint of blood of the same hue, and half coagulated. On carefully opening this tumour, I traced a canal or sinus, permeating the tissue of the mesentery, and terminating in a kind of ruptured opening into the duodenum, about an inch and a half below the pyloric orifice of the abomasum. Every vessel in this portion of the mesentery was dilated.

The splenic vessels were equally enlarged. The spleen itself was considerably engorged, and weighed more than fourteen pounds. There was a rupture on its upper surface, three inches in length, and which appeared as if it had existed several days. The abdominal muscles in this region, for several inches in diameter, were in a congested and blackened state, and this reaching quite through to the external integument. The other contents of the abdomen were apparently healthy.

The lungs were nearly white and bloodless, and so was the heart. The liquor pericardii was of a rather darker colour than usual, and somewhat increased in quantity. The medulla spinalis contained no trace of disease, except in the lumbar region, and there it was of a madder colour. The brain exhibited no derangement, and, in short, with the exception of the lesions which I have described, and there being very little blood in the whole system, and bleeding evidently hastening the fatal termination, every organ seemed to be free from either acute or chronic disease.

I am inclined to believe that the spleen is the original seat of the evil, or there is some accidental bruise on the part of the abdomen opposite to the spleen. It is this way only that I can account for the discolouration of the muscles of the abdomen. This opinion was very much corroborated in a late case; for I found at the yard-gate the end of a rail projecting a few inches

from the post. It was covered with hair, which exactly corresponded in colour with that of the cow, and it was of precisely the same height of the apparently bruised part. I inquired about this, and one of the men said that another cow pushed this one, a few days before, with very considerable violence against the end of this rail, as she hurried through the gateway, which was very narrow. From some such accidental circumstance, the whole of these cases might have proceeded.

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## THE USE OF HYDROCYANIC ACID IN TETANUS.

*By the same.*

I WAS glad to see a communication from Mr. St. Clair, confirmatory of my opinion of the sedative effects of Hydrocyanic Acid in Tetanus, as recorded in the 10th volume of THE VETERINARIAN, p. 248. Although his method of employing it varies a little from mine, and he has not stated the source whence he derived the hint of using it, I am much gratified by his account of the experiments which he has instituted. It is nearly thirteen years since I began to have recourse to Hydrocyanic Acid in these cases, and I was not aware until I saw those experiments of Mr. St. Clair, that any one had been pursuing the same course. I hope that the result will be as satisfactory to him as it has been to me.

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## OSSIFICATION OF THE CARTILAGES OF THE EAR, AND THE MODE OF CURE.

*By Mr. JOSEPH CARLISLE, V.S., Wigton, Cumberland.*

ON the 5th December 1838, I was requested to examine a grey mare, the property of a miller, who informed me that her ears had degenerated into bone. On examination, I found this to be the case. The ossification had gone on to a great extent, particularly about the base of the ear; and the annular cartilage had become so hard and osseous that a common observer might call it a process of the cranium. The deposition had made such rapid progress in those parts, that the whole cartilaginous structure of the ear was completely involved, and its free and elastic property totally destroyed. The beginning of the meatus auditorius externus was completely obstructed and plugged up.

No cause could be assigned, excepting that, when two years old, the mare had received an injury in the eye, and it was necessary to apply the twitch freely to the ear, in consequence of



her ill temper during the time of dressing the wound; this being the only means of subduing her. Was this sufficient to produce the disease, by causing excessive inflammation; and was increased vascular action of parts thus set up, and a morbid deposition to the secretion of bony matter the result? This might be one cause; but, as the mare was also lame from ossification of the lateral cartilages of the foot, she might, perhaps, be considered to be morbidly predisposed to take on ossification.

This was the most singular disformation in nature I ever saw. The ears had diverted from the conch on trumpet-like shape—were much augmented in breadth, and their continual erection presented a singular appearance; while, on examination, they felt as hard and rigid as the horns of an ox.

*Treatment.*—It struck me very forcibly that pericondriotomy—simply dividing the covering of the cartilages of the ear—might be attended with beneficial result. I mentioned this to the owner, who readily consented; the mare was prepared, and I proceeded with the operation; first, on the external parts, which I soon finished. In commencing with the internal, I was a little retarded in my proceedings from the flow of blood getting into the internal ear, which I thought might produce considerable irritation. I placed on the opening a small piece of sponge, which completely prevented the course of the blood, and the operation was soon concluded. The incisions were many, and over the most morbid parts.

The after-treatment consisted of an ointment, composed of  $\mathfrak{z}$ ij ung. hydrarg. fort. and  $\mathfrak{z}$ ij iodine, rubbed well together, and applied every day. This application might assist the absorption. Iodine is rendered more active by the addition of mercurial ointment. Under this treatment the mare improved daily; the parts became more flexible, the ears began to assume their natural form, the muscles have regained their proper functions over the parts, and she is able to move the ear in the direction necessary to collect the different sounds.

## OPERATION FOR OSSIFICATION OF THE LATERAL CARTILAGES.

*By the same.*

I PERFORMED the operation on the same mare for ossification of the lateral cartilage; but, in this and several other cases, I performed it subcutaneously; first making an incision on the posterior ridge of the cartilage, and introducing a probe-pointed seton needle over the whole substance. I next introduced my periosteotomy

knife, and cut freely into the ossific deposit, commencing at the anterior part, and moving the knife to and fro on the lateral parts of the cartilage, nearly severing it asunder. There is extensive hemorrhage during the operation, it being necessary to apply a bandage to stay it.

In order to complete this operation, the foot should be well dressed, the sole pared thin, and the commissure freely opened, and Turner's unilateral shoe applied. The ointment was used after a few days, as above. This treatment I have found a complete specific. The lameness is immediately removed, and the substance gradually disappears. I could relate three or four cases, were it necessary; but perhaps this feeble hint may induce others to test it ere long. In the mean time, I anxiously wait the result. This is a valuable improvement in veterinary practice, and its discovery I must be permitted to claim; for, I think, the operation is not on the records of our art. I must leave it, however, to the inquiries and experience of my brethren to test its real worth.

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P.S. During the discussion of my paper on the hock of the horse, Mr. Cheetham contended that the ligaments have little or nothing to do with spavin. May I beg to call that gentleman's attention to the Abstracts of the Proceedings of the Veterinary Medical Association for 1837, p. 153; he says, "spavin was not, so much as had been imagined, a disease of the *mucous* membranes of the cushion bones, it was, primarily, a ligamentous disease;" and, at p. 154, in answer to some questions put by Mr. Holmes, he says, "the disease is in the ligaments, and they are the first to become ossified." Mr. Cheetham questions the majority of veterinary surgeons' knowledge of the hock. Will he enable us to share in the new light which has burst upon him?

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## ON THE HYDATID, OR TUMOUR ON THE BRAIN.

By BEN LEDI.

THE hydatid, or tumours on the brain, is a disease very fatal to sheep, and other animals, and well worthy of a better pen than mine; yet I cannot but think it is a subject which has not had proper attention paid it by the majority of our authors on veterinary matters, and lecturers on animal pathology, who pass over it with little regard, merely informing their class, that it is a dangerous disease, and always terminates fatally. To this I offer my protest, and will endeavour to give a few brief remarks on the subject, the knowledge of which I obtained from actual practice.

At an immature age the animal becomes the subject of hydatid. Before the sinuses of the head are properly developed, the intruder gains admittance, and takes up its abode, completely encased in a dense membrane on the superior part of the head, and becomes a complete source of irritation and pain, gradually continuing to enlarge. The fluid found within the tumour appears to be secreted by its lining or inner membrane, and its consistency is similar to the fluid found within circumscribed cavities. When the tumour is opened, and the contents subjected to microscopic inspection, numerous young hydatids may be seen.

The indicative symptoms of the hydatid cannot well be mistaken. At the commencement, the animal runs headlong over every thing in its way; but as the disease advances, it becomes more tranquil, seldom shifting its situation, but continually moving in a circular direction, and appearing quite sturdy and insensible to surrounding objects—the head inclined to the affected side, and the nose pointed to the ground. On examining the eye, the pupil appears very much dilated on the diseased side; and when the head is raised, the levator oculi acts violently, and turns the globe of the eye quite upwards.

On further examination, the situation of the tumour may easily be detected. Use a little pressure, and a soft and yielding portion of the cranium may be distinctly felt; at the same time the animal will exhibit great pain.

You now know the situation of the hydatid. Adopt the following treatment, and if the operation be scientifically performed, and before the animal becomes too much debilitated and oppressed from functional derangement, the operation will succeed in two cases out of three. In the first place, clip off the wool, make an incision through the skin, lay it aside, and retain it there with a stitch. Then take a circular tube of iron that will remove at least a portion of the bone the size of a shilling. Lay a piece of wet cloth on each side of the wound to defend it from the fire; bring your tube to a dull red heat, and apply it with a light hand. You will soon penetrate to the substance of the brain, for the bone is very thin, and apparently absorbed, in order to adapt itself to the tumour. Raise up the bone with a scalpel, and the tumour will come through the opening—detach it from its situation carefully, without bursting, if possible; for if it burst, some of the young hydatids may remain.

As soon as the tumour is removed, close the opening with the circular piece of bone, for the external air is detrimental. Lay the integuments together, stitch them close, and apply a pitch plaister. Then take some wool, dip it in warm pitch, place it



upon the plaister, and the operation is finished. Allow the dressing to remain until the reproduction of wool removes it.

About two feet of an old gun-barrel makes an excellent instrument for opening the cranium. Previous to using it, it should be filed to a sharp edge round the end—the utility of the tube is, that when applied to the head, the caloric is going off at the top, otherwise it would be determined to the head, and be productive of mischief. Sometimes the hydatid is situated underneath the horn, and difficult to get at. In this case, the most judicious proceeding is to saw off the horn as close to the head as possible, and the tumour may be got at with ease. A little more on the diseases incidental to sheep shall appear, should they be thought worthy a place in your valuable periodical. I remain, &c.

In cases of hydatid in cattle, I would pursue the same treatment.

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[We readily give insertion to this letter, although we are more than half inclined to think that our correspondent is a wag.—Y.]

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## CASES OF NEUROTOMY.

*By Mr. C. S. GREEN, V.S., Fareham.*

IN the spring of 1839, I was sent for to examine a bay mare which had been lame for nearly two years. She had ossified cartilages, and, at the same time, a copious discharge from the frog, of a highly offensive character, which was soon cured by the application of the common pitch ointment. The lameness, however, remained, and the actual cautery and blistering having been already tried, the owner wished me to adopt some other treatment, and purposed particularly to have her unnerved. I operated on her a little above the fetlock, and she got up perfectly sound, and has resumed her old station, working on the farm.

### CASE II.

A chestnut mare, that had been lame for twelve months, was brought to us in order to be unnerved. My father performed the operation at the fetlock-joint. She got up quite sound, and has been used as a hack for the last three years, remaining, up to the present time, quite sound. I am unwilling to occupy much of that valuable work *THE VETERINARIAN*, but a long time has passed since you or your contributors have said one word on this most important operation. It is not practised so much as it ought to be by the veterinary surgeon, and the farmer and the horseholder do not sufficiently appreciate its value.

## ON SOFTENING (RAMOLLISSEMENT) OF THE LIVER IN THE EGYPTIAN HORSES.

*By M. HAMONT, Founder of the Egyptian Veterinary School.*

THE horses in Egypt are subject to a peculiar softening of the parenchyma of the liver. It is frequently observed in cavalry horses, and also in the horse of the agriculturist. It often attacks a great number of individuals at the same time. It is of more frequent occurrence in summer than in winter. Its favourite subjects are fully grown and over-fed horses. It is very slow in its progress—always dangerous—destroying a great proportion of those whom it attacks—sometimes connecting itself with other incurable diseases, as farcy and glanders, or appearing all at once, without any appreciable cause, and in animals that, to the very moment of attack, had apparently enjoyed the most robust health.

It may be detected by the following symptoms:—paleness, infiltration, and often a yellow tint, with ecchymosis of the mucous membranes. The horse is fatigued by the slightest exercise—he draws his hind limbs slowly after him—he frequently breaks out into copious sweats—he carries his head low—is continually shifting his position—he feeds very slowly—is careless about water, and the pulse is from 30 to 40 in a minute. At a little later stage of the disease he is evidently losing flesh, and that more or less rapidly—his coat stares—the natural temperature of the body is diminished—the mouth is moist, cold, and frequently covered with foam—he begins to stagger as he walks—he almost seems as if he was intoxicated—if he lies down, it is with great difficulty that he rises again—the pulse is easily compressed—the pulsations of the heart are feeble, and not exceeding 30, or 25, or even 20 beats in a minute—the respiration is slow—the eyes gummy—the conjunctival membrane infiltrated, ecchymosed\*—the excrement imperfectly elaborated, and containing many grains of barley—the appetite continues, but the body is covered with flies, and the wasting is rapidly increased.

This state of things may possibly last two or three months, and then the hind limbs are swelled from the belly to the foot—the pulse is always the same, feeble, and slow—the countenance is anxious—the patient is shifting his posture every instant, sometimes leaning on one side, and sometimes on the other—the head still held low, and the appetite now gone. The food is seized with difficulty, and very slowly masticated—the dorso-lumbar portion

\* This peculiarity is observed in almost all the internal diseases of the Egyptian horse.

of the spine is bent—the hind limbs stand apart from each other—the urine is clear, abundant, and but seldom discharged—the skin is cold—the excrement containing more indigested food.

When glanders or farcy is complicated with this disease, its progress is more rapid. Ordinarily for some hours before the death of the animal many of these symptoms disappear. The animal becomes unquiet—his uneasiness increases—the pulse becomes small and frequent, and often rises to 90 or 100 beats in a minute. At length the animal lies down—he struggles for a few instants, and dies.

*Post-mortem Examination.*—Decomposition proceeds very rapidly. The liver is generally hypertrophied—of a clear yellow colour—its investing membrane is very easily detached—its substance is soft or almost pultaceous, greasy to the touch, and congested with blood. This ramollissement is either partial, or extended through the whole of the viscus. Often it resembles *bouillie* enclosed in a serous sac—there are no traces of the bloodvessels—it is extravasated bile mingled with the parenchymatous mass. If the disorganization affects only one portion of the liver, there, nevertheless, exists a complication of disease which is speedily fatal to life—the abdominal viscera are pale and humid—there is little blood even in the larger vessels, and this fluid has lost its colour and its plasticity.

My inquiries into the nature and the causes of this disease were anxious and long continued. I consulted veterinary authors, but I found nothing satisfactory in the account which they gave. Few persons, before me, had studied the maladies of the Egyptian horse, and that which I found in the works of human physicians, who had accompanied our troops over the same districts, did not appear applicable to the case. At length I read in “The Dictionary of Medical Science” the following sentence—“In the colliquative softening which is the consequence of certain internal diseases, the tissue of the parts loses its natural density, it becomes soft, and then almost fluid. It has lost its component element—the molecules are deprived of their proper organic character, and even the bones and the cartilages lose their density in certain diseases.” Comparing this with what I had observed respecting the diseased livers of the horse, I thought that I could trace a very considerable analogy, and I began to recognize in the manner in which the Egyptian horses were fed and treated much that, in a great measure, accounted for this ramollissement. The inhabitants of these countries are accustomed to leave their young, and adult, and old horses, indiscriminately to feed on green trefoil, in the fields, during four or five months, taking the absurd and injurious precaution of tying them up, so as to render almost the slightest motion



impossible. The same custom prevails in the army. This manner of feeding, conjoined with the deprivation of all exercise, occasions a degree of *embonpoint* pleasing to the eye, but deceitful and dangerous. Adipose matter accumulates on almost every part of the body, and at the expense of that nutriment which should add to the development and power of the muscles. The consequence is that the animals are debilitated. If they are ridden they break out into profuse perspiration, and blunder at almost every step.

The blood of the horse thus kept on green meat is more watery than that of others that are fed on dry aliment, such as hay and barley. The debilitating effect of this absurd and prolonged mode of treatment is seen most of all in those that are above five or six years old, and whose growth is complete. The green trefoil, long continued, affords neither to the muscles nor to any other part of the frame the elements which are necessary to their normal and healthy condition.

The complete inaction to which they are abandoned at this period is another powerful occasional cause of evil, and it is a matter of constant observation, that, with a high degree of temperature, there is connected an increased predisposition to disease.

Another powerful predisposing cause may also be found in the absurd and injurious practice of suddenly passing from dry to green food, and from green to dry.

Having little doubt that this absurd method of feeding had considerable influence on the development of this disease, I endeavoured to effect some reform with regard to it. As it was impossible for me to exert much influence on the inhabitants, I commenced with the army. I addressed several reports and memorials to the minister of war, praying him to try the experiment of a change, even on a small scale. My observations were not at all to the taste of the reigning powers, nor consistent with the deep-rooted prejudices of those who had been accustomed to exercise control in these matters. I was assured by some, that, by suppressing or diminishing this exhibition of green food, which had been so long established in Egypt, I should render the horses blind; others told me that I knew nothing about the climate of Egypt or the danger of the change which I contemplated.

All this opposition, far from discouraging me, rendered me more determined to carry my point. I replied to my opponents by referring to the neighbouring country of the Hedjas, where the horses whose breed was so much esteemed were kept a much shorter time on green meat. These discussions, at length, made their due impression on the council, and experiments with regard to this disputed matter were ordered to be undertaken. The horses of two regiments used to be fed on fresh trefoil during forty days. One

of them remained out only twenty days, and during the following year none of them were sent out unless some disease rendered the use of green food expedient.

This experiment was followed by the results I expected and wished. The horses were not so fat, but they were stronger, and discharged far better than before the work that was required of them. In the mean time, the minister changed the commanding officer of this district, and the newly promoted one, was no sooner settled in his situation, than he expressed his determination not to hear of any modification of the ancient habits and practice of the country: it was therefore necessary to try some other plan. There was a stud at Choubrah, managed by the Turks. It is sufficient to say, that this establishment was precisely what was to be expected from such a management, and almost every possible disease prevailed in this confined, infectious inclosure, called a stud. Glanders, farcy, ramollissement of the liver, and worm diseases were of every-day occurrence. The numerous annual losses experienced in this institution determined his Highness to confide the direction of it to me. I had then an opportunity to institute, on a large scale, the desired experiments, and to prove, beyond dispute, the truth of that which I had asserted. I effected a total change in the management of the place, and, among other things, the system of feeding was considerably modified. Having at my disposal, during the whole of the year, plenty of lucerne and trefoil, I alternated the usage of these green plants with that of dry food. In the spring, only the mares and the colts ate more of green meat than of dry. This was also the case with our stallions during about two months, taking care, however, that they had, every night and morning, a little barley and straw. The usual exercise was taken, and the animals were loose in their paddocks. These changes contributed, by degrees, most singularly to ameliorate the constitution and condition of the animals. The diseases which prevailed in the old establishment disappeared, and softenings of the liver, so frequent at the present day (the end of 1838) were extremely rare.

The different experiments to which I subjected the sick horses have proved to me that cold baths, cool and well-aired stables, substantial and varied food, and moderate exercise, were the proper measures to be adopted when ramollissement of the liver was feared.

*Curative Treatment.*—I acknowledge that I was exceedingly embarrassed when I was first called upon to point out a remedy for a disease which had only lately offered itself to my attention. Examination of the pathognomonic symptoms soon enabled me to discover the seat of the lesion; but of what nature was it, and what treatment was I to employ? I had recourse, in the first place, to general bleedings, and mucilaginous drinks, and vesica-

stories on the right hypochondrium, and the evil increased. The disease was uniformly aggravated after the abstraction of blood. I repeated this treatment on many horses, and with the same result. Some of my patients fell and expired after the bleeding from the jugular.

I was then compelled to have recourse to an opposite mode of treatment; and although I was somewhat prejudiced against it at first, I soon became fully sensible of its value, for almost perfect success began to crown my proceedings. Nourishing diet, varied, and administered in small quantities and frequently, barley mash, astringent decoctions, solutions of alum, sulphate of iron in doses of two or three drachms—the administration of two or three ounces of oil of turpentine, gentle exercise and cold baths, soon produced a favourable change in the patient, and effected a cure in twenty or thirty days. Great benefit was derived from the alternate use of some of these medicaments.

Injections, the dashing of cold water on the loins, wine and l'eau-de-vie, were likewise useful. The acetate of potash, in doses of two ounces, every second day, was evidently attended with good effect. This salt had great influence in recalling the appetite.

[To be continued.]

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## A SCIRRHOUS TUMOUR IN THE LUMBAR REGION OF A MULE THAT DIED OF ENTERITIS.

*By M. LAUX, M.V. at Cruri.*

ON the 19th of April 1836, I was requested to attend an old mule that had been ill eight or ten days. She had been under the care of a farrier, and had been treated in the manner that is usual among those people in our country.

**SYMPTOMS.**—Extreme emaciation—the skin dry and sticking to the bones—the spine curved downwards, and very tender—the respiration loud and painful—the pulse small, and, occasionally, not to be felt—the head carried low, and with heat about the frontal region—the countenance depressed, and the eyes weeping—the conjunctiva yellow, and its venous ramifications injected—the mouth pale and clammy, sometimes hot, but, oftener, extremely cold, the muzzle having also this variable temperature—the faecal matter covered with yellow mucus, and the urine abundant and thick.

These symptoms became aggravated at night. During the day they almost disappeared, leaving the animal in a state of quietude very likely to deceive the careless examiner.



In her walk she rolled a little, as animals do that have any disease referrible to the lumbar region; and this had been observed during nearly a twelvemonth.

The farrier had already bled her largely several times; he had also placed two setons in her breast, and had ordered her warm gruel for her drink, and injections of an infusion of mallows.

Considering that the debility in which I found her was the consequence of the too frequent and copious bleedings that had been effected, I had recourse to revulsives externally, with a view to determine some metastasis of internal inflammation; and I ordered tonics to be administered, in order to rally her almost exhausted powers. A mustard cataplasm was placed over the chest—the limbs were well embrocated with vinegar, and the animal was thoroughly dressed all over, in order to excite the natural action of the skin.

Independently of the gruel, with a portion of nitre in it, which was ordered to be frequently administered, there was also given a decoction of poppy-heads and lime flowers, and this was preceded by the following medicine:—honey, two ounces; gum arabic, an ounce; and red bark, in powder, half an ounce.

This was continued until the 2d of May, without any considerable change; but on the 4th of May, the animal appeared to be better, and the bark was suspended.

6th.—She was quite gay, and the paroxysm of the preceding night had been very slight. On the 8th, she was dismissed; but I recommended the owner to continue the setons for awhile, and to be very careful with regard to her feeding; for the farmers in our country, seeming to have nothing in view but the labour which they can extract from their animals, are sadly impatient to get them again into working condition after any illness, and therefore permit them to eat immoderately during their convalescence, and, in this way, often produce fatal indigestion. So it happened here. On the 18th of the same month, ten days after my last visit, I was sent for again to the same patient, who, after a too full repast on lucern, was seized with stomach-staggers, and died in the evening of the same day.

*Autopsy eight hours after death.*—The abdomen was strangely distended, and contained three pailfuls of bloody serous fluid. The digestive canal was of a leaden colour externally, still exhibiting slight traces of the inflammatory disease which I have described—the mucous membrane was abraded in some places, especially in the small intestines and the floating portion of the colon. The stomach was filled, distended with food of a yellow colour, and exhaling a disagreeable acid odour. The heart was also filled with a green-coloured fluid.

To the sublumbar region was attached a conical body slightly curved, presenting nearly the form of a heart, and almost as large as a pail. Its base included the two kidneys, and its point hung free in the abdomen. From the base, and from the side of the left kidney, a large cord proceeded, apparently of the same nature of the tumour itself. It was continued anteriorly and posteriorly, upwards and downwards, and terminated in the cartilaginous portion of the ribs. This mass, being carefully raised and separated from the kidneys, weighed more than  $27\frac{1}{2}$  lbs. On being cut into, in different parts, it appeared to be of a cartilaginous nature, except that there existed some spots of a deep yellow colour; beneath these were excavations as large as an egg, which contained a puriform yellow matter.

This appeared to me to be a scirrhus tumour, the commencement of the growth of which must certainly be carried back to the period when the animal began to exhibit a weakness in the loins. As for any thing else, and whatever may be its nature, I do not suppose that it had the least to do with the production of the disease of which I have given an account; for it did not by its situation afford any obstacle to the proper discharge of the digestive functions.

There was a simple serous effusion in the thoracic cavity, and the posterior edge of the left lobe of the lung was hepatized.

The cavity of the cranium did not exhibit any thing unusual.

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[We select this deceptive case of *fever*, as we should call it—fever never subdued, and that would at some not very distant period have destroyed the patient, without the aid of the distention of the stomach—we select this case, as enabling us to form a tolerably correct idea of the practice of our country veterinary brethren on the neighbouring continent. This is our object, and therefore we make no comment on the practice; but we must say, that we regard the enlarged mesenteric gland as intimately connected with the disease, perhaps with its origin, but most certainly with its continuance.—Y.]

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## CRIB-BITING.

WE return, and with much reluctance, to this most obscure and unsatisfactory subject. Could it have been divined that the Essay on Crib-biting which was presented to the Veterinary Medical Association by Mr. Holmes, would afterwards, and by the authority of its author, have appeared in the columns of a provincial paper—that that which was gratefully received as a contribution to veterinary

science would be made to assume or to approach to the character of an advertisement—(we speak without authority from any one or communication with a single individual)—it would not have been discussed in the theatre of the Veterinary College, nor would it have found a place in the records of the Veterinary Medical Association.

We speak not this in anger; but we say that Mr. Holmes forgot, for a moment, the regulations of every respectable periodical. A communication transmitted to a journal is thankfully received. It is valued as tending to the promotion of the object to which that periodical is devoted, and as a compliment to that particular journal; but could the intention have been suspected, that it was—and by the very agency of the author—designed to run the round of the press, it would be rejected with something like contempt.

We are assuming no high or false ground, but we are speaking of the invariable practice of the press, the laws of which are like those of the Medes and Persians, so far as the Editor is concerned, although they may be inadvertently and pardonably transgressed by the correspondent.

This Essay was sent to the *Yorkshireman* provincial paper, as well as to the Veterinary Medical Association. Mr. Wheatley, of Staindrop, happened to see it, and was not satisfied with the account which was given in it of a certain "Horse Cause," in which he was a witness. We reluctantly insert his observations. To Mr. Holmes will remain the right of reply; and, then, this subject must be considered as dropped for ever.

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*Letter from Mr. Wheatley.*

Staindrop, May 13, 1839.

Sir,—IN this month's Journal, I see that an Essay on Crib-biting was read at the Vet. Med. Association on February 19th, and the same Essay also appeared in the *Yorkshireman* newspaper last April, which I had the opportunity of reading a few days ago, wherein I find that Mr. Holmes, V.S. of Thirsk, has thought proper to introduce the following language:—"I think it a very rare case, indeed, that an old horse becomes a crib-biter, let him be placed where he may; notwithstanding there is against me the evidence of three veterinary surgeons in a case tried at York in 1838 (*Freer v. Hodgson*), and which was, that old horses are as liable to become crib-biters as young ones. One of them said, that when a horse was perfectly free from cribbing, or the symptoms of cribbing, on one day, he was liable to, and even had, become a cribber on the next. This was the case in a horse nine or ten years old. How far this evidence was *cor-*



*rect*, those who are acquainted with the diseases of horses will be the best able to judge."

The above has induced me to write, and to acquaint you that the statement is incorrect, inasmuch that it was never said that old horses were as liable as young ones to acquire the habit of cribbing, and, also, that the horse was not nine or ten years old, for at that time he was *seven*, no more. Mr. Holmes has misunderstood the evidence. I gave my evidence, that I had known instances of horses acquiring the habit of crib-biting at a later age than that of the horse in question; for some, like Mr. Holmes, doubted whether aged horses could take up the habit. Of this I am satisfied. In short, I am strengthened in my opinion by an instance which has occurred since the trial, of a seven-year old carriage-horse taking to cribbing; and the groom says he "got hold of it" by standing alongside of one that previously indulged himself in this trick. Be this as it may, he is now a confirmed crib-biter. In another case that came under my own observation, a five-year old mare became a crib-biter, in my opinion, from biting and holding on at the manger when they dressed her.

I have lately attended a colt, four years old, for injury of the back, and he possesses this propensity quite out of the common way. He is obliged to feed out of a stone manger, which may, probably, be the reason why he has left off laying hold of it with his teeth; but still he indulges in the habit of resting his lower jaw very expertly on the edge of the manger.

In conclusion, I am wishful that that part of Mr. Holmes's Essay should be set right, as regards the trial of the bay horse that Mr. Freer, the dealer, purchased from Mr. Hodgson, of Staindrop: for it was not said by any of the three veterinary surgeons, Mr. Adamson, of Durham, Mr. Pinnock, of York, or by myself, that old horses were equally as liable as young ones to become crib-biters. Mr. Adamson or Mr. Pinnock may, probably, have answered this. I have not seen the former of late, although we occasionally do meet. He it was that furnished the case of a horse unknown to have any symptom denoting the approach of crib-biting, and which became a cribber in a single day by standing alongside of a beast of this description; at least, he was never accustomed to the trick before. There can be no doubt that the habit can be acquired from imitation.

I have seen horses crib-biting at the gate when out at grass; yet I do not recollect an instance of one becoming a crib-biter when out at grass, but I have heard of such things.

S. WHEATLEY.

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## ON INVERSION OF THE UTERUS IN COWS.

MR. WHEATLEY says, that he has been called to cases in which the uterus of cows, after calving, has been completely inverted. With difficulty he returned them, and they did well, with one exception only. He asks whether I know an instance of the kind, and the cow continuing to breed and to do well.

There are numerous cases on record, in which the inverted uterus has been returned, and the cow has apparently done well; but the farmer, thinking it probable that she would abort during her next pregnancy, or that inversion of the womb would again occur, has fattened and killed her. There are several cases in which the secretion of milk did not appear to be in the least degree diminished after she had quite recovered from the prolapsus. And there are others, but not so numerous, in which the cow became again pregnant, and safely produced, and nursed her little one. I would refer Mr. Wheatley particularly to the 1st volume of *THE VETERINARIAN*, p. 378, and the 9th volume, p. 591. If I much wished to retain the breed of a cow in whom successful replacement of the uterus had been effected, I should not hesitate to keep her, and let her again become pregnant; but if I placed no particular value upon her, I should dry up her milk at the proper period, and fatten her for the butcher.

Y.

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 THE VETERINARIAN, JULY 1, 1839.

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Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

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WE can at length announce to our readers—and we do it with a degree of exultation in which they will fully participate—that the work of reformation *has commenced* in the southern veterinary school.

During a considerable proportion of the season now drawing to a close, both the Professors have been seriously indisposed, and totally unable to discharge the duties of their respective situations; and it cannot now be said that the health of either of them is perfectly re-established. Week after week passed away, and

not a lecture of any description was given in the theatre; nor would there have been one demonstration in the dissecting room, and, worse than all, the clinical instructions of the yard and the stable would have altogether ceased, had not Mr. Spooner fortunately resided close to the College, and, at the request of Mr. Sewell, devoted the whole of his time to the anatomical instruction of the pupils, and the treatment of the patients. The present class owes to Mr. Spooner the deepest debt of gratitude for the promptness with which he undertook, and the talent with which he executed, the laborious task.

In the mean time various interviews had taken place between a zealous and influential member of the English Agricultural Society and certain of the Governors of the Veterinary College; and the subject of the extension of the instruction of the pupil to the anatomy and pathology of all our domesticated animals, or, in other words, the placing of the College in that position, with respect to the agriculturist, which its founder had intended, but which, by some strange fatality, had been neglected and forgotten, was discussed. There seemed to be but one feeling—veterinary instruction was originally designed to be communicated in all its branches, and should in future be so. The opposition—artful, virulent, deadly—which in one quarter had been made to this, ceased when it appeared to be altogether fruitless; and although certain minor details may yet remain to be discussed—and in our next Journal we shall, probably, be able to speak satisfactorily of them all—it is arranged that instructions shall henceforth be given to the pupils on the Anatomy and Diseases of all our more valuable domesticated animals.

In order that this shall be perfectly carried out, a third Professor has been added to the College. Mr. Coleman retains the title of “Professor:” he will treat of the Pathology of the Horse; and the general superintendence of the institution will rest with him. Mr. Sewell will be “the Deputy Professor;” and, in addition to the duties which he has hitherto discharged, lectures will be required from him on the pathology of the new classes of patients. In addition to the former duties of the Demonstrator, “the Assistant Professor” (Mr. Spooner has been appointed to that situation) will give a series of Lectures on the Anatomy and Physiology of the



new Patients: and, in case of the illness of either of the other Professors, will occupy his chair, and lecture for him as long as may be necessary.

Stalls are, without delay, to be erected for the reception of the bovine patients, and folds for the sheep, and sties for the pigs. From the commencement of the session in November next, the new era is to take its date.

In our next number we shall, doubtless, have more to say. In the mean time, we heartily congratulate every well-wisher to our profession on the prospect which is opening before us.

Y.

## VETERINARY JURISPRUDENCE.

### *The Right of the Owner to recover Damages for a Blemish occurring in blistering a Horse.*

IN our notice to Correspondents in THE VETERINARIAN of last month, we stated that we had "seen an account of a strange trial; and, in our opinion, unjust verdict, respecting an accidental blemish in the blistering of a horse." We now extract from *The Liverpool Standard*, the substance of the trial. We know nothing of the parties, but we think such a case deserves to be exposed.

#### HOPKINSON, v. THOMAS.

The plaintiff was a coachman, and the defendant a veterinary surgeon, both residing in Liverpool.

Mr. Thos. Lawrence, coach and omnibus proprietor, residing at Albany Villa, near Aigburth, deposed to knowing the plaintiff, and that in the autumn of 1837, he swapped a horse of his, worth £50, with a gentleman, receiving another horse and £25. He valued the horse he received at £30. He was then in poor condition. He afterwards sold this horse to Mr. Hopkinson for £25, as a favour, being what it had cost him. In the month of October, before the accident, he should say that the horse was worth £50, and was at the present time worth it but for the blemish. He recommended Mr. Hopkinson to turn him out to grass, and first send him to Mr. Thomas to be blistered, and he was accordingly sent from his place to Mr. Thomas, by Mr. Hopkinson's orders, on the 7th of October. He saw the horse three days after at Thomas's with a blemish on his knee, and the leg was very much swollen. A light discoloured bloody froth was working out of the blemish from a kind of scratch. He saw Mr. Thomas, and asked him how he came to let the horse blemish himself in that way. Mr. Thomas said he did not think it would be much, and they walked together into the forge, where the horse was tied to the rack. He (witness) told Mr. Thomas that he would find the blemish was one for life. He (Thomas) then said, it was the fault of

his stupid lad,—that he had let him knock his knee against the manger. He (witness) told him, he ought to have prevented it. The horse came back to his place in November, to go to grass, and there was then a scab on the knee, from a wound, not from a blister. Some ointment was sent to dress the wound. The horse was altogether about three weeks under the treatment of Mr. Thomas. Eight or ten days, in his judgment, was a sufficient time for a horse to remain under treatment for a blister. There was a charge for keep and treatment for 21 days. He recollected being at Lucas' Repository when the horse was put up for sale, and the highest bidding for it was £14 5s, at which sum he was bought in. He believed it was not the intention to sell him, but only to ascertain what he would sell for. Mr. Thomas told him the horse had been tied to the rack, and pointed to the manger, and told him he had injured himself by knocking his knee against it. In his judgment, the proper mode to treat a horse, was to turn him round, and to tie his head to the bastions; or if he was not reversed, to tie his head to pillars in the centre of the stall, so that he could not injure his knees. The latter plan was sometimes pursued, as they could not approach the manger, and some horses were quieter with their heads towards the manger than when turned round. He had been in the habit of knowing and treating horses thirty years, and had blistered a great many in his time, and had blistered some very lately.

Cross-examined.—To his knowledge and experience, the custom, and the proper treatment, was to reverse the horses when blistered on the fore legs. That was the safest way; and if a professional man adopted another practice, likely to damage the horse, it was a bad course.

Mr. Cottingham.—But is it unprofessional so to treat horses when blistering?

Witness.—I mean to say, to tie them to the rack is a very bad practice; I won't say any thing about the profession; they will profess any thing.

The witness was then cross-examined at great length, in order to shew that when the horse was turned into the field, the other horses drove him over a low rail fence, which he leaped, and in so doing injured his knee by knocking it against the rail, as the wound in the knee broke out again on the following day. The witness produced a stake as high as the rail, from which it appeared that it was only 16 inches high, and the rail had not been knocked down.

George Bentham examined.—Was formerly in the employment of Mr. Lawrence: first observed the injury to the horse's knee in those stables, and told his master, who went to see him. He had seen horses blistered on the fore legs; he had seen them tied both ways, with their heads turned round to the back end of the stall (their heads where their tails should be), and also tied up to the rack. In his opinion the safest way was to have them tied with their heads at the back of the stall.

Alfred Bagnall examined.—Is a veterinary surgeon, and a member of the college of surgeons. He had seen the horse; he had a large blemish on his knee. He had been in the habit of blistering horses. In his judgment, the proper mode of tying a horse, while under the treatment of blistering on the fore legs, was to turn him round in the stall, to prevent his hurting himself. He could not then injure his legs; there was nothing to kick against. The blister irritated the legs where applied, and the horse was apt to kick.

Cross-examined.—A horse under treatment ought to be turned round about 36 hours. The necessity for this would depend on the strength of the blister, and not on the temper of the horse. It was his practice to turn them round.

Peter Burns, livery stable keeper.—Had been in the habit of seeing horses blistered, and in his opinion, the proper way to fasten a horse under this

treatment, was when turned round in his stall, to prevent him from hurting himself.

Cross-examined.—It was not common to tie a horse to the rack under such treatment, as to reverse him. The practice was to reverse him.

Thomas Preston examined.—Had had 45 years' experience among horses, and had been foreman to a veterinary surgeon 13 or 14 years, and had also been servant to Mr. Briscoe. He had both blistered horses, and had seen them blistered by the farriers. He had seen them blistered by Mr. Wilson, Mr. Waring, and Mr. Briscoe; and the horses were always tied reversed in the stalls, by order of those veterinary surgeons, or their apprentices.

Cross-examined.—Had lost his place under Mr. Briscoe, because folks liked to see fresh faces. He took a little drink sometimes; but no gentleman ever complained about him.

This was the plaintiff's case.

The following witnesses were called for the defence :—

Henry Middlehurst, apprentice to Mr. Thomas.—He remembered the horse coming to Mr. Thomas to be blistered. He was tied to the rack with two halters, and secured as they generally secured them. He remembered the horse receiving an injury about the 10th day, when tied to the rack. He received an abrasion of the hair and the cuticle—a delicate insensible membrane covering the skin. The hair would grow over that injury. If the skin had been cut deep, it would not. He had not been blamed for the injury.

Cross-examined.—Mr. Thomas had blistered horses since, and had tied them up to the rack in the same way. He had only reversed one since, which was for an injury to the shoulder.

Henry Bradshaw, the other apprentice to Mr. Thomas, examined.—Had not been blamed for the injury the horse sustained.

Fennell Briscoe, veterinary surgeon, examined.—Had been in practice 20 years, and during that time had been in the habit of blistering horses. The usual course pursued, was to tie them up to the rack. He had never in the course of his practice been in the habit of reversing horses. He thought a horse by being reversed would be more liable to accidents; he would be more liable to injure his hind legs by striking against the manger, and producing what was commonly called a "capped hock." In all cases of blistering the fore legs, in his judgment as an experienced veterinary surgeon, the proper mode was to tie a horse to the rack close up to the manger. If a horse was reversed there would be much more danger of his coming down on his knees. From the description of the injury, in his judgment the hair would grow again over it.

Cross-examined.—He thought there would be no less danger of a horse hurting his knees by being reversed when blistered.

Mr. Ellis, veterinary surgeon, examined.—The proper mode of treating horses when blistered on the fore legs, was to tie them to the rack. He was of opinion, from the description he had heard of the injury, that the hair would grow over it again.

Cross-examined.—He had not seen the horse, he only judged from description.

—Hughes examined.—Had been in the employ of Mr. Lucas five years, and had charge of the sick horses, and the blistering department always came under his care. The proper way to treat horses in such cases, was always to tie their heads to the rack. He never knew but one instance when a horse was reversed, and he was a very restive high-spirited horse. He was of opinion, from a description of the injury, that the hair would grow again. He never knew of a horse cutting his knee in his life from having his head



tied up to the rack. The manger in question was an ordinary one, and had been used by Mr. Wilson, veterinary surgeon.

Cross-examined.—A restive horse would kick with his hind legs as well as with his fore, and there would be greater danger of his getting his hough injured by being reversed. He did not attempt to reconcile this with his statement of reversing the restive horse. He merely mentioned it as having taken place.

James Fagan, veterinary surgeon, examined.—He had seen horses blistered before being turned out to grass, and the proper course to pursue was to tie them to the rack. He was of opinion that the hair would grow again, from a description of the injury.

Robert Reader, groom, examined.—Was formerly groom with Mr. Josh. Ewart. He saw the horse in the next field to the one he had been put in after he had been turned out. He had been forced over the fence by the other horses. That must have been the case, or he would not have gone out of the field. He saw his knee all bloody, and concluded he had knocked it against the rail. He told Mr. Lawrence about it, who said he knew it was a little done, and sent him to Mr. Thomas, for some ointment to dress it.

This was the defendant's case.

The learned Assessor, in summing up, said the evidence was very conflicting, and it would be for the Jury to weigh it, and state whether or not, in their opinion, proper care had been taken. He then went carefully over the evidence.

The Jury expressed a wish to retire, and, after an absence of half an hour, found a verdict for the plaintiff,—Damages £5.

We have said that we consider this to be an erroneous verdict. There is no doubt that, while the horse was under the care of Mr. Thomas, the animal got blemished—he struck his knee against the edge of the manger, and produced some swelling and abrasion of the part. This is admitted. Although the profession, according to Mr. Lawrence, will “profess any thing,” Mr. Thomas does not attempt to deny this. Was this the proper mode of tying a horse? Is this the practice of veterinary surgeons generally? Is it the safest for the horse? If so, Mr. Thomas is not amenable for any accident that may occur from the plaintiff's horse having been thus tied up. All that is required, is for the surgeon to pursue the usual routine in these cases, and to act according to the best of his judgment. When the head of the horse is tied up, so that he can be removed only a little way from the rack, he is unable to get at and to nibble or injure the blistered and painful part.

First, as to the practice. Mr. Lawrence, an omnibus proprietor, Mr. Burns, a livery stable keeper, George Bentham, a groom, Mr. Preston, who had been foreman to a veterinary surgeon, and Mr. Bagnall, a veterinary surgeon, state, that the proper mode of treating a horse was to turn him round in his stall, and fasten him to rings at the side of the end of the stall, or to pillars in the centre of it.

On the other hand, Messrs. Briscoe, Ellis, and Fagan, veterinary surgeons, state that the usual course was to tie the horse up to the

rack. To this may be added, that every acknowledged authority in veterinary literature inculcates this practice, and that veterinary surgeons—a hundred to one—pursue it.

Next, as to the safety of the practice. If it were not, generally speaking, safe, it would not be thus taught and practised. It preserves the blistered part from being injured. The only danger is the striking the knee against the manger, and bruising it, and that happens so rarely, that with regard to nine veterinary surgeons out of ten, their whole lives will pass without any serious injury being thus inflicted. While, if the horse is reversed, he is more likely to injure his hind legs by striking against the manger, and thus getting capped hocks; and there is more danger of his coming down upon his knees.

It was the overwhelming preponderance of security,—the assurance of the almost impossibility of danger, which attended the practice of tying the head of the horse to the rack—that induced Mr. Thomas to exclaim, when told by Mr. Lawrence that the knee was injured, “If it be so, it is my stupid lad who has let him kick his knee against the manger.” They go together to the stable—the bruise is evident enough—not one word, however, is said of the halter being improperly tied to the rack,—the defendant finds no fault with his apprentice, either then or at any future time; but the cause of the injury of the knee, and the ground of the future action, is, that the head of the horse was tied to the rack, instead of the animal being reversed in his stall: and on this point, and contrary to the recommendation of every veterinary work, and the experience and the practice of almost every veterinary surgeon, the Jury give a verdict in favour of the plaintiff.

As to the episode with regard to the further injury of the knee after the horse had been dismissed by Mr. Taylor, and turned into Mr. Lawrence’s fields, it is almost too ridiculous to occupy a moment’s attention.

Robert Reader, groom to a gentleman not connected with either the plaintiff or defendant, sees the horse in a field *next to that* into which he had been turned. The knee was all bloody, and he concluded that the horse had knocked it against the rail which parted the two fields. He told this to Mr. Lawrence, who said that he knew it was a little done, and sent him for some ointment.

The counsel for the defendant had pressed Mr. Lawrence on this point, and that gentleman, in order to prove that no harm could have been done, produced in court a stake 16 inches long, and which he said was the height of the rail: he also deposed that the rail had not been knocked down. If we were inclined to retaliate on Mr. Lawrence, or, if we judged of his brethren by his conduct on the day of trial, we should say that “coach and omni-

bus proprietors will swear any thing." We will content ourselves, however, with asking, Was there ever so lame and impotent a conclusion, as that a horse could not have broken his knee against a certain railing, *because that railing was only sixteen inches high, and had not been knocked down?*

## A CASE OF INDIGESTION WITH VOMITING IN A MARE.

*By Professor GELLÉ, of Toulouse.*

ON January the 20th, 1812, a mare, attached to a cart, in the road to Parthenay, where I then lived, was taken ill, apparently with colic. She soon began to discharge through the nostrils a great quantity of glairy matter, of a sour smell, and mingled with portions of food. Having yet a mile to go, it was with great difficulty that he could get her along, and, as soon as he had arrived at Parthenay, he sought me out.

I found her covered with sweat, in great agitation, rolling herself continually, and her belly distended. She then, all at once, raised herself on her haunches, the abdominal muscles were violently contracted, her head and neck were extended horizontally, and she vomited through her nostrils a great quantity of mucous fluid, mixed with portions of food, and exhaling an acid smell. I proceeded to examine her. The pulse was small and concentrated, and the extremities cold. The carrier assured me that she had neither urined or dunged since the halt at dinner-time. She refused some gruel which I offered her. I told the waggoner that I had no hope of saving her; but, at his request, I undertook the case. I obtained the following information from the driver, which sufficiently clearly pointed out to me the course I was to pursue. He was a spice-merchant, and was accustomed to go to Saumur, Nantes, and Noirt, in quest of goods. His mare was well-fed and taken care of. He had come through Niort and St. Maixent, which were then crowded with cavalry, and forage for his mare was procured with difficulty, and, consequently, it was bad, and particularly at the inns. The mare had eaten little of it, but, on arriving, on the 20th, at Resanne, where he stopped to dine, finding some excellent hay, she had eaten to excess. She was always a voracious feeder. She started off again as soon as she had finished her feed. She was a free goer, and the carriage was heavily laden, and hence the indigestion and its consequences.

I hastened to mix an ounce of sulphuric ether with a pint and a half of warm honied water, and administered it to her very carefully. I followed this with two enemata of bran water, to which I



added some nitrate of potash. I ordered her to be rubbed briskly, and for a long while, all over, and then covered her with a woollen cloth. She appeared calmer, and rested awhile, with her head hanging down—her pulse small, accelerated, and concentrated—her body covered with perspiration—her respirations regular in number, but laborious, and occupying much space.

After this she began again to vomit dreadfully. I gave her some emollient injections, but they only produced a fresh fit of vomiting.

I now gave her a second dose of ether, and repeated the injections and frictions. Two hours afterwards the pulse was more developed—the perspiration diminished, and the extremities were not so cold. Presently afterwards she voided a considerable quantity of strong-smelling, saffron-coloured urine, after which she became more calm. The injections and the frictions were continued for another hour, when the mare became more attentive to surrounding objects—less dissipated—the swelling at the flanks had disappeared—the sweating had ceased—the temperature of the body was of a normal character, the pulse was good, and, at length, she evinced a desire to feed. I recommended the continuance of mashes, and a very slow return to her usual food.

On the 23d she was sent to her usual work.

*Le Zooïatre du Midi.*

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## ON THE USE OF BELLADONNA IN COLIC.

*By Sig. V. CANTIELLO, V. S. to the Queen's Regiment of Cavalry, Naples.*

A GREY horse, five years old, and of a voracious appetite, was often subject to colic. This affection was in general successfully treated by clysters and emollient drinks; but, one morning, these remedies had no effect. The disease rapidly increased—the respiration became difficult, the flanks heaved violently—the abdomen was becoming distended—the mouth was hot—the breath stinking, and the animal strained violently in voiding his urine. The usual anodyne draught was given\*, and, after that, a decoction of chamomile, in order to ease the pain, and facilitate the escape of the gas; nor were clysters forgotten. Nothing was of avail, and the sufferings of the animal increased every minute.

The hand was introduced into the rectum, which felt very hot, and was filled with dry, hardened fæces, coated with mucus tinged with blood. About a pint of the best olive oil was given, and a solution of the nitrate of potash, and the horse was walked gently

\* Sig. Cantiiello does not mention the composition of this draught. He was writing for his Neapolitan brethren, and not for us.

about. The pain seemed somewhat to abate, and the urine was discharged with greater facility.

This remission of the symptoms, however, was not of long duration. The pain returned, and the animal became worse than ever. Emetic tartar was then administered, and, as a last resource, a cold bath was tried. The horse was no longer able to stand, and the feeble oppressed pulse indicated the near approach of death.

With no hope of success, but because I would not abandon the case, I determined to try the belladonna, of the extract of which half an ounce was given. This had an almost magical effect. The horse soon afterwards got up, and began to walk slowly about, hanging his head, however, very low, and staggering as he went. At the expiration of two hours an abundant evacuation of fæcal matter and of gas took place.

The symptoms gradually subsided—the mouth became moist, the breath was no longer fœtid—the staggering disappeared, and the head resumed its natural position. In a few days every vestige of disease was gone, and the horse returned to his duty.

“LE UTILI COGNOSCENZE,” edited by *Professor Ferdinand de Nanzio, Naples.*

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## A NEW ESCHAROTIC APPLICATION FOR ULCERS, ABSCESSSES, &c.

*By M. T. VERET, Jun.*

[We abridge an account of this escharotic, contained in the March number of the *Recueil de Méd. Vét. Pratique*. There is a great deal promised: some of our readers may, perhaps, put this *heal-all* to the test.—Y.]

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THIS liquid is composed of white vinegar, seventy-eight parts; the bisulphate of copper, ten parts; and sulphuric acid, twelve parts. The bisulphate of copper is powdered and dissolved in the cold vinegar, and the sulphuric acid is afterwards gradually added. The quantity of the copper may be considerably increased, if thought proper. The compound escharotic is usually applied to the diseased part with a feather. The pain which it causes seems to be very acute for a time, but soon passes away.

It was first applied in *sore feet* and *foot-rot* in sheep. When there is only some chafing of the interdigital integument, one application of the caustic will usually be sufficient: but if the disease is farther advanced, it will be necessary to remove the portions of horn that are torn or separated, and then to apply the fluid by means of the feather to the sensible parts thus exposed, and let the sheep loose. It will rarely be necessary to dress the

foot many times; and in the majority of instances one application will be sufficient to obtain a radical cure at the expiration of two or three days, even although half the horn is cut away. When the disease is of so serious a character as to render it necessary to bind up the foot, the escharotic must still be applied by means of a feather, and some dry lint placed over the part. Were the pledget of lint saturated with the fluid, it might, perhaps, act too powerfully, and eat too deeply. The lint may be removed, and the escharotic applied by means of the feather every day. The shed or stables in which the animals are kept while this is going forward should be clean and dry, and, if the weather is fair, they should be permitted to run out into a dry yard. When the rot once appears in a flock of sheep, every one of them will probably be infected if the shepherd neglects his duty in the slightest degree.

*Foot-rot in cattle.*—This disease is of rare occurrence—I mean the true *foot-rot*, characterized by the following symptoms, redness and heat of the integument between the toes—swelling of the foot reaching to the fetlock—a vesicle appearing at the coronet filled with a limpid fluid—separation of the horn from the sensible parts beneath, and ulceration beneath the horn. I have treated this disease in the way that I have recommended for foot-rot, and, although I have occasionally been compelled to take away almost the whole of the horn, yet, after two dressings, the lameness has nearly disappeared, and the wound has been healed.

The cow is subject to another disease of the foot. The animal is somewhat lame for a longer or shorter time before the external appearance of any disease. At length the claws begin to separate a little; the interdigital integument becomes inflamed and tender—the foot is hot—the lameness increases—often the secretion of milk diminishes, and the appetite becomes impaired—the coronet, the pastern, and then the fetlock, become enlarged: at length, the skin, and especially at the pastern joint, begins to ulcerate, and the wounds discharge a limpid red fluid, which soon becomes concrete. The ulcers deepen and spread, they extend between the claws—they become gangrenous, and, in some more than usually malignant cases, they destroy the animal. On the first appearance of this disease the parts should be well embrocated, and this should be continued while any lameness remains. Even if the swelling has reached the fetlock, the vinegar should be used: but as soon as there is the slightest wound, the parts should be well bathed with soap and water, and then the escharotic applied. One or two dressings with it will usually accomplish a cure. The wounds being healed, the frictions with vinegar may be continued, in order to remove any enlargement that may remain.



*Canker in the foot of the horse.*—If the frog is bruised or wounded, the detached and loose portions should be cut away; the exposed sore part washed with vinegar, and then this caustic lightly applied once or twice; but if there is much ulceration, the foot should be well pared out, every separated or loose portion of the horn removed, or any ulcerated or cancerous part of the sensible frog itself; and then, after the exposed surface has been washed with vinegar, a feather slightly wetted with the escharotic fluid should be drawn over it, and moderate pressure applied to the sore. The dressing should be repeated every third or fourth day, taking care that every part of the surface that has not a healthy appearance is touched with the fluid. During the whole of the treatment, if the horse is not very lame, and the weather is dry, he may be gently worked. In the course of a month a complete cure will usually be effected.

*Cracks in the heels.*—After having well washed the sores with soap and water, and removed every portion of hardened matter that may surround them, they should be lightly touched with this mixture. Two or three days afterwards, this may be repeated, if the first application has not fully effected the purpose. The escharotic, however, must not be applied too frequently or too freely, lest the sores should be enlarged or deepened.

*Grease—Dartres humides.*—The horse, in marshy countries, or in an ill-managed stable, in which the dung and urine are suffered to accumulate, is subject to a scurfy eruption on the legs and feet. As soon as it appears, the hair stands on end, the skin thickens, and a fetid secretion of limpid fluid, which soon becomes concrete, takes place. If care is not taken, this extends over the fetlock, and particularly the heels, and, perhaps, causes thrush and swelled legs. This eruption is easily removed, although in a very advanced stage, by cleaning the part first with soap and water, and then applying a little of this mixture once in three or four days. Two or three applications will almost always suffice.

*Swelled legs.*—I have never used the escharotic in this complaint, except in a very early stage of it, and before it had attacked the pasterns. The same precautions are necessary as in *dartres*.

I have no doubt that this fluid would be exceedingly useful in farcy ulcers, and in all wounds of bad character, particularly in the ulcers of cows attacked with *aphthæ*.

This escharotic has a peculiar action on the morbid secretions of the skin and the mucous membranes; and it is to this property, which it possesses in a high degree, that we must attribute its usefulness in a crowd of analogous cases, and which, at first sight, appear so different from each other.

## AN ESSAY ON A SPECIES OF INFLAMMATION OF THE BRAIN, PECULIAR TO CATTLE.

*By M. GELLÉ, Professor at the Royal Veterinary School of  
Toulouse, and grounded on facts communicated to him by  
M. MULLON, Sen., of La Rochelle.*

[The sterling value of this Essay will, we are perfectly assured, be deemed a sufficient apology for its length.—Y.]

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I do not know, says M. Mullon, whether this malady has been observed by other veterinary surgeons, but it certainly has never been described. In the country in which I practise, it is designated by the name of the spider disease—*d'araignée*, because some empirics attribute it to the introduction of one of these insects into the cranium of the ox, which feeds upon the brain, and causes all the evils that we are about to describe.

The symptoms being almost always the same, it will be desirable to enumerate them in a general manner, in order to avoid repetition.

Two days before the animal becomes decidedly ill, he carries his head low—he does not eat half of his usual allowance, but, apparently, with the same appetite—he creeps slowly along, far behind the rest of the flock—he scarcely regards the goad, and he is little occupied by the objects which surround him. Although the sense of sight is actually little affected, a spectator would say that the animal was blind. It is by this that the farmers know that the beast is attacked by this disease.

The animal gradually becomes worse, and, on the third day, the conjunctiva is red and inflamed, and there is a considerable discharge of tears. On the fourth day, the ophthalmia is intense, the lower lid is reversed, the weeping still increased—the lucid cornea becomes opaque, the pituitary and buccal membranes are red, an abundant discharge of mucus proceeds from the nostrils, and of viscid saliva from the mouth, while deglutition is become impossible. On the fifth day the inflammation of the conjunctiva has attained to such a point, that the eyes are surrounded by a red projecting ring, the consequence of the reversement of the eyelids: the central portion of lucid cornea, yet apparent, is very small—sometimes opaque, yellow, thickened, and at other times preserving its transparency. A thickening of the pituitary membrane gives a whizzing sound to the respiration, and, sometimes, the difficulty of breathing is extreme—an infectious and bloody discharge runs from the nostrils, and occasionally brings with it portions of the mucous membrane, and the patient is threatened with instant suffocation.

At this period of the disease, the animal is lying down and getting up every moment; he can no longer breathe except through the mouth; he cannot swallow, at least without great pain, even the gruel which is administered to him, and, if the inflammation attacks the larynx, the oppression and difficulty of breathing are intolerable; the whizzing sound of the breathing is changed for one of stertorous character; the nostrils are dilated, the mouth is open, and the tongue hanging from it, and the sufferer is continually directing his muzzle to his side. He now rises with difficulty, staggers as he crawls along, and at length suddenly falls. He lies for awhile with his head stretched on the ground, or, oftener, doubled on his flank, and dies.

**AUTOPSY.**—The orifice of the nostrils is in a state of putridity. The nasal cavity, through its whole extent, is obstructed by the thickening of the pituitary membrane, which is dreadfully excoriated, and readily separated from the parts beneath. The mucous membrane of the arch of the palate, and the fauces, is in the same state, and so is the larynx, the thickening of which is so great as almost to close the glottis. All these surfaces are infiltrated with a fluid of a deep yellow colour, with this difference, that the infiltration of the membrane of the trachea never reaches the commencement of the bronchi. The sinuses of the head are generally filled with a bloody mucous fluid, deeper coloured in the neighbourhood of the cranium. The character of this infiltration seems to be governed by the state of the brain.

The brain is found in one of two very different states—either there is induration and atrophy of the brain and the cerebellum, or the substance of these organs is softened, and there is dropsy of the head.

In the state of induration the brain scarcely half fills the cavity of the skull, and the meninges present, in some cases, patches and ecchymoses of a deep wine-red colour scattered on a white ground; or, in others, petechial spots, and thickly set red points. The pia mater and arachnoid membrane seem confounded with the cerebral mass, and cannot be separated or distinguished without difficulty. The brain and the cerebellum, much diminished in bulk, have the form and consistence of an irregularly rounded apple. A kind of neck, the continuation of which is very remarkable, separates them from the spinal cord: one would almost say that this diminution of bulk was the result of a ligature tied round the commencement of the spinal cord.

The cerebral pulp, divided in different places, presents a striated appearance, and ecchymoses of corrupted blood form. The nervous pulp has the consistency of half-baked bread. It is of a pale orange colour, and crushes between the fingers: it resembles the parenchyma of the liver. The vessels of the brain are



filled with coagulated blood of a rusty colour, and which might be reduced between the fingers to a powder resembling fine sand.

When there was ramollissement and water on the brain, the infiltration of the sinuses of the head was less discoloured and greater in quantity. The meninges were yellow throughout their whole extent. In this case the bloodvessels were easily distinguished, and the filaments of the trisplanchnic, or sympathetic nerve, which penetrated into the brain, were seen, and of a deeper yellow than the vessels. The cerebral pulp, mingled with the hydrocephalic fluid, resembled a yellow *bouillie*, and so completely filled the cranial cavity as to cause a hernial protrusion between the pia and dura mater as soon as the skull was opened. If this hernia was punctured, the fluid rushed forth in a jet many inches in height, forcing out with it a portion of the meninges and the plexus choroides.

In two of the five cases that M. Mullon examined there was induration of the brain, and ramollissement in the other three.

CAUSES.—M. Mullon divides them into two classes. 1st. Innate or natural, which he attributes to the peculiar structure of the venous system: 2d. Accidental.

*Innate causes.* There is no one of the domesticated animals so subject to apoplexy as the ox, and this is occasioned by the greater size of the veins. Who has not seen animals of this species, apparently well in the evening, and dead on the following morning, and presenting no other morbid lesion but effusion of blood within the cranial cavity? Induced by these facts, M. Mullon thinks that if an ox is in a state of plethora, in a greater or lesser degree, and that, notwithstanding this abundance of blood, it may not be such as to cause fatal apoplexy, this may, nevertheless, terminate in a congestion more or less considerable, and produced in a greater or less length of time; a congestion which will occasion the disease of which we are now treating. In proof of this opinion, we can say, that the greater part of the oxen labouring under this disease which we have treated were in good condition, and came from spring pasture, and that this species of inflammation of the brain is confined to the warm periods of the year. The cows also that have been attacked by it, were also in good condition, and were neither milkers nor nurses.

“In the summer seasons, from 1812 to 1818, I opened,” says M. Mullon, “more than sixty fax oxen that died suddenly, as was generally supposed, of inflammatory fever; but I am now convinced that the greater part of them were apoplectic. There is a distinction between these two diseases as easy as it is essential to know, and it is apparent at the very first glance of the animal. Oxen that are attacked by *inflammatory fever*, have, almost always, emphysematous enlargements, and accumulation of gas in

the rumen. After their death, there flows from their mouth and nostrils and anus a black spumous blood. On different parts of the body, and in the subcutaneous cellular tissue, are emphysematous and crepitating tumours, whence, on incision, flows a black blood, mingled with fetid gas. The animals that die of apoplexy never have these emphysematous tumours, and if, after death, blood flows from the nostrils of some, that blood retains its ordinary colour, and a post-mortem examination presents only a bloody effusion in the brain. The distinction between these two classes of disease is important in a medical point of view, and with reference to legal proceedings."

*Accidental causes.*—These are sudden concussions of the brain from violent blows, or their contests with each other—the rupture of some vessels within the brain—hard and long-continued work during the hot season, especially if the beast, at the conclusion of his work, is not soon liberated from the yoke.

*TREATMENT.*—*Case I.* July 12, 1813. A very good working ox, that had been ill seven days, was confided to the care of a *charlatan*, who employed fumigations of aromatic vinegar—applications of crushed aulx between the forehead and the nape of the neck, and who administered every day three drinks composed of theriaca\* boiled in red wine, in order *to drive away the plague!* The advanced state of the disease, and the unfavourable prognosis which he formed in his own mind, induced M. Mullon to forewarn the proprietor that he had little hope of success: nevertheless, being encouraged by him, he abstracted a considerable quantity of blood, and employed emollient baths and fumigations, and injected into the nostrils some warm acidulated water, which brought away with it some bloody mucus, and fragments of the mucous membrane. This gave some momentary relief to the animal, that was breathing with the greatest difficulty. A hot poultice of boiled mallow-root was applied to the head, and emollient injections were thrown up; but, in despite of all this care, the ox died in the following night. The brain was softened, and there was a considerable quantity of fluid in the cranial cavity.

*CASE II.*—*June 27, 1814.* A cow, ten years old, and six months gone with calf, was suffering from this disease, then in an early stage. The eyes were clouded, but the sight was not entirely gone. M. Mullon proposed a copious bleeding, and hinted that it might be necessary to repeat it. The proprietor of the animal refused his consent, under the pretext, that these bleedings would necessarily produce abortion. He then wished to amputate one of

\* The French theriaca, like the old English compound of the same name, is composed of between thirty and forty incongruous substances, and used only by the most ignorant practitioners. Its general effect is that of a cordial or stimulant.

the horns. This also was refused, and he was compelled to limit his remedial measures to fumigations, emollient injections, enemata, restricted diet, &c. On the 18th of July, the 21st of the disease, he found the cow in a state of dreadful suffering. He staid and witnessed her death, and on afterwards examining her, found the brain in a state of induration.

CASE III.—A beautiful ox, of the Auvergne breed, and six years old, had been ill six days. The early symptoms resembled inflammation of the larynx: but, rendered aware of the real character of the disease by the preceding cases, M. Mullon abstracted twelve pounds of blood, had recourse to emollient fumigations, while injections of the same kind, but slightly acidulated, were thrown up the nostrils, which were in a state of ulceration. These fumigations and injections were repeated every two hours, and were followed by the discharge of much mucus and portions of detached membrane, and the breathing was thereby rendered more free. A poultice of mallow roots was applied to the crown of the head, and renewed twice in the day, and emollient injections, a little warm, were freely used.

The animal ate a little green meat, and drank some gruel. Drinks of a decoction of mallows, thickened with oatmeal, were administered, very slowly and gently, on account of the difficult respiration.

18th.—He was no better. Twelve pounds more of blood were abstracted, and one of the horns was cut off, four inches from its base, which also produced a very considerable hemorrhage. I introduced also two setons, charged with blister ointment and corrosive sublimate; the one commencing at the poll, and directed obliquely backwards and downwards, for the space of nine inches, near to and above the jugular; the other commencing at the termination of the former, and reaching to the dewlap.

19th.—The patient was better—the inflammation of the interior of the nasal cavities was much diminished, and several flakes of the pituitary membrane, of considerable size, and of a most infectious smell, were detached.

20th.—The air passed freely through the nasal passages, and without any hoarse or whizzing sound; the bloody discharge from the nostril was diminished, and was less fetid. The wound in the horn had begun to suppurate, and was dressed with simple digestive ointment. The two setons had produced very considerable swelling, which extended towards the dewlap, and was there as large as the animal's head. M. Mullon scarified it deeply, and produced considerable discharge of blood. The former treatment continued.

23d.—The cornea is opaque; the wound in the horn suppurates well, and the pus runs abundantly. No discharge from the setons;



the tumour at the dewlap was cauterized with the hot iron, and a cord covered with digestive ointment was passed through it. The ulcerations in the nostrils have quite disappeared: the appetite and strength of the animal have returned. The medicine is discontinued, but injections are still used. Green maize, and not too abundantly, is given as food.

*Aug. 14th.*—The general health of the animal is materially improved, but the blindness remains. The proprietor, becoming impatient, would have had the animal slaughtered, but this was opposed by M. Mullan, who thought he could perceive that the opacity was beginning to be a little diminished at the edge of the cornea. From this time the opacity did evidently, although slowly, diminish; and on the 19th of September, and three months after the first attack of the disease, the animal returned to his work.

*CASE IV.—Sept. 19th, 1819.* A cow had been ill five or six days. M. Mullan found her lying in a meadow, her head extended, and she unable to rise. The spot on which her head lay was covered with bloody mucus, and portions of the lining membrane of the nostrils. The eye was opaque, and of a deep white colour; the inflammation of the larynx was extreme, and the animal was almost insensible. Eight pounds of blood were abstracted; the horns were cut off, and the blood suffered to flow abundantly from the wounds; four setons were applied about the head and neck, two on each side, and disposed as in the last case.

*20th.*—No discharge from the setons, and the cow in the same general state. The owner, in moving the head, thought that he heard the noise of some substance floating within the cranium. M. Mullan heard the same several times. She was now in a state of complete immobility. Her respiration was so feeble that it was almost doubtful whether she lived. In this state she remained until the night between the 23d and the 24th, when she died.

On opening the head, the brain, the cerebellum, and the pons varolii (*mésocéphale*) were found shrunk and hardened, and resembling a ball attached to the spinal cord. This mass, floating in the cranium, produced the sound which had been heard. "It is inconceivable," says M. Mullan, "how an animal could live four or five days the brain being in such a state of induration and contraction. I would not have believed it, if I had not seen it. It is a satisfactory proof that the animal life can be extinguished a long time before the organic life."

*CASE V.—May 23, 1823.* A Champagne ox, one of the most beautiful races in Europe, had lost its appetite, carried its head low, the eyes were inflamed, clouded and weeping, and inflammation had commenced in the nostrils. Seventeen pounds of blood were abstracted, and one horn was cut off and suffered to bleed. Two setons were placed in the neck, fumigations applied to the

nostrils, poultices to the head, enemata were injected, and little food allowed.

29th.—Very little difference, except that swelling was commencing about the setons. A second bleeding was proposed, but the proprietor objected.

30th.—The inflammation had increased; the cavities of the nose were obstructed; the eyes were more opaque, and the appetite diminished. The setons had not continued to enlarge, and there was no suppuration where the horn had been amputated. Eleven pounds of blood were taken away, and, as deglutition was still easy, six gallons of decoction of linseed, warm and acidulated, were given in the course of the day: the nostrils were steamed, and the poultices regularly renewed.

June 2.—The setons have produced considerable swelling—a fetid suppuration proceeds from the stump of the horn—the inflammation of the nostril is not increased, nevertheless there is a flux of somewhat fetid bloody mucus from the nostrils, but without any fragments of membrane. The eyes were more clouded. Six pounds of blood were abstracted, and the swelling at the seton place scarified. A considerable quantity of red blood escaped from the scarifications. The general treatment continued.

8th.—The appetite continues, but the discharge from the nostrils discolouring, and, giving a foetid smell to the gruel, the animal refuses it—the eyes are in the same state—the spirits are better, and the head is not carried so low. The lotions, and injections into the nasal cavity discontinued, but the other treatment continued.

From this time the patient began to improve, but the discharge from the nose continued until the 13th, and the eyes were not clear until six weeks afterwards.

CASE VI.—*June 5, 1825.* A young cow, in the sixth month of her first pregnancy, is suddenly become blind; the respiration is difficult, and there is a flow of bloody and infectious mucus from the mouth. The proprietor would not suffer more than two pounds of blood to be abstracted. He afterwards permitted one horn to be amputated, but had the hemorrhage stanchd at the expiration of ten minutes. Two setons were inserted, and recourse was had to the fumigations, and lotions, and poultices, and injections, described in the former cases. M. Mullon retired, displeased with the obstinacy of the peasant, and was not recalled until after the death of the cow, which took place on the 10th. The brain was softened, or rather dissolved, in a quantity of fluid, with which the cranium was filled.

CASE VII.—*Aug. 26, 1829.* A cow had inflammation of the conjunctiva—the lucid cornea was almost opaque—a bloody mucous fluid ran from the nose, the appetite was impaired, and she was in the seventh month of utero-gestation. Here, also, M. M.

could not obtain permission to bleed, and was compelled to pursue the same course as in the last case.

29th.—Inflammation had attacked the pharynx and larynx: the difficulty of breathing was extreme, and she staggered as she walked. He now was permitted to take away six pounds of blood. She died towards the middle of the following night, the air-passages being closed by the thickening of their lining membrane. On examination-after death, a considerable effusion of red-coloured fluid was found, which occupied every sinus of the face and head. On opening the cranium, a liquid, darker coloured than that in the sinuses, spirted out, holding in suspension different portions of the brain, in a state of ramollissement and dissolution.

M. Mullen has remarked that, in the animals in which the disease terminates in induration, the eyes become quickly opaque, and the lucid cornea is much thickened, and reflects a perfect and deep white colour; but that in the cases in which it terminates in softening of the cerebrum or cerebellum with hydrocephalus, the opacity of the eye is imperfect, and the power of vision never altogether lost. Also, that in the first case, or that of induration, the disease does not so soon run its course. These are important observations.

CASE VIII.—The diagnosis of this case may be somewhat doubtful; it is one of a cow, that slowly dragged herself along, inattentive to surrounding objects, and of which she previously used to be afraid, and who soon became insensible to every excitant, even to the prick of a needle. The head was carried low, and the eyes were weeping. In despite of the incertitude of the diagnosis, he bled to a considerable extent, and applied a wet cloth to the head, which was frequently sprinkled with cold water. He also applied the lotions, lavements, &c. already described. She speedily recovered, and on the 31st was sent again to the pasture.

M. Mullen praises the readiness with which the proprietor of this animal acceded to all his wishes; and he thinks that the fatal cases that have been cited were so through the neglect and obstinacy of the masters. Throughout the whole of the neighbouring country the proprietors of cattle have an invincible aversion to bleeding.

CASE IX.—This case is taken out of its order, on account of some peculiarities which attended it.

Aug. 31, 1828.—A calf, fifteen months old, had been ill fifteen days. Her walk was slow, and every motion was evidently painful—the eyes were immoveable and dull; exterior objects no longer seemed to make any impression, and the animal was unaware of the plainest and most palpable danger; the appetite also was much diminished. M. Mullen was consulted at his house, without having



the opportunity of seeing his patient. He induced the owner of the calf to bleed it copiously, and to adopt the means that have been described under the former cases.

An empiric was employed to carry all this into execution; but he abstracted only two pounds of blood, instead of the twelve which M. Mullon had ordered, and inserted his seton on the forearm, instead of the situation that had been directed.

The disease rapidly pursued its course, and the animal, at liberty in one of the courts, wandered here and there, distinguishing no object, although its eyes were perfectly clear, and every stone or other irregularity of surface causing her to trip and fall. When she had fallen she remained on the ground until some one came to raise her. If she was stopped in her progress by the trunk of a tree, or any elevated object, she would push her head against it, and remain immoveable until she was taken away. If she was stopped by a wall, or faggot-rick, she would support her head against it, but without violently pushing, as the vertiginous would do. She seemed to be merely supporting her head against the wall, instead of pushing violently against it, until she was led away. There was no inflammation in the eyes or the nose, the larynx or the pharynx, as in the cases already described. The pulse was full without being accelerated; the bowels were open, and the urinary secretion as it ought to be.

M. Mullon saw the patient on the 2d of September, at night, and he immediately bled her to the extent of thirteen pounds,—cut off one of her horns, and left the hemorrhage to itself—applied a poultice of hot mallow leaves to the head, and frequently administered some linseed tea, acidulated, and thickened with oat or barley meal. He frequently gave these drinks, both acidulated and farinaceous. He did not place a seton in the dewlap, because that which had been introduced into the dewlap formed a frightful wound. Without the knowledge of the veterinary surgeon, this seton had been dressed with camphorated brandy, which had altogether arrested its suppuration. In despite of this, after four or five days' treatment, the intensity of the disease very much diminished, and, at the expiration of ten days, she was in a state of convalescence. She, however, carried her head low, and there was a sluggishness about her which indicated some cerebral disease. M. Mullon substituted the application of cold to the head for the poultice of mallows, and this completed the cure.

M. Mullon has endeavoured to prove, by a course of reasoning too long to transcribe here, that the disease of this calf was slight inflammation, altogether similar to those which had been already described, and not vertigo.

As confirming these interesting cases sent to me by M. Mullon,

I will describe an analogous one, which I owe to the kindness of M. Fourés, M.V. at Montesquieu.

"In February 1835, I was desired to attend an ox belonging to M. Albert, of St. Leon. He drew himself as far back from the manger as he could, having his ears hanging down, and his head low. The head was occasionally raised a little, but only to fall again immediately. He was in a complete state of somnolence; his sight was entirely gone—the pulse was frequent—the skin adherent, and the walk staggering. The animal could not move, without the greatest difficulty, the right fore-leg, which had, however, preserved its perfect sensibility.

"*Treatment.*—Copious bleeding—enemata, and the dashing of cold water on the head. The proprietor refusing to have a seton inserted, M. F. was limited to the employment of the means just mentioned, together with the plentiful use of diluents. This mode of treatment not being attended by any good effect, he had recourse to purgatives. The disease, however, increased, and became complicated with paralysis of the right side. The animal pressed his head against the wall, from which it was almost impossible to remove him—the pulse became very slow—the sense of sight and of hearing were gone—and at length the animal died, after an illness of three weeks.

"*Autopsy.*—There was nothing abnormal either in the abdominal or thoracic cavities. In the cranium, however, the meninges were red, and a sero-sanguineous fluid surrounded the brain in great abundance, and filled the ventricles. The left lobe of the brain was much softer than in its natural state; but the right hemisphere was hard, and when it was cut with a scalpel, a creaking noise was heard. When crushed under the fingers, the cerebral pulp seemed as though it contained numerous grains of sand. It was of a whitish yellow colour."

*Le Zooïatre.*

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STUDENTS WHO HAVE PASSED THEIR EXAMINATION AT THE  
ROYAL VETERINARY COLLEGE, LONDON.

*June 4th, 1839.*

Mr. William Allen, Ellesmere, Shropshire.  
Mr. T. Parkinson, South Hiendley.  
Mr. William Ernes, Belgium.  
Mr. D. Briggs, Bassenthwaite, Cumberland.

*June 19th.*

Mr. E. B. Goodwyn, Framlingham, Suffolk.

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COMPARATIVE ANATOMY AND PATHOLOGY.

By Mr. YOUATT.

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LECTURE XXV.

*The Orbit of the Eye in the Bimana and Quadrumana—in the Quadruped—the Horse—the Ox—in them the Bone continuous in the outer Ridge—the Interposition of Cartilage in the Omnivora and Carnivora—the Direction of the Orbits in the Horse—Ox—Sheep. The Situation of the Eye generally—the Peculiarity in Carnivorous Animals—the Protection of the Eye—the adipose Matter—the Position of the Orbit in the Ox. The Situation of the Eye-ball—the Protection of his Eye—the Use of the adipose Matter—Fracture of the orbital Arch—Mr. Pritchard's Case—M. Leblanc's Experience—where the Fracture is most frequent. Mode of Treatment. Exostosis—its frequency abroad. The Exostoses which are fatal—the Use of Iodine—Caries—Puncture of the Walls of the orbital Cavity—Treatment—Cases.*

AS we proceed posteriorly along the base of the brain, the optic nerves present themselves next to the olfactory ones. It is with some degree of pleasure that I approach the consideration of them, but I confess that I have much more painful apprehension, lest I should not do justice to a subject so intimately connected with the comfort and the value of our patients, and necessarily leading us, to a certain extent at least, to the consideration of a principle second in its importance and sublimity to that of attraction alone, and, like it, pervading the boundless realms of space. You, however, in lectures like these will forgive me, and think that I am pursuing the safest path, if I studiously confine myself to a simple description of the organs of vision in our domesticated animals,



the manner in which their important functions are discharged, and the diseases to which they are subject.

**THE ORBIT OF THE EYE.**—We shall perhaps most advantageously pursue our subject by considering the situation and external protection of the eye. We find it lodged in a bony orbit or socket; somewhat differently placed, and differently formed in different animals. In the human being and in the quadrumana the defence of the eye superiorly, inferiorly, posteriorly, and laterally, is composed of bone. The comparatively little extent of motion which the posterior maxillary bone requires in the act of mastication in these animals permits of the outer sides of the orbit being constructed of bony matter; and by means of which somewhat greater security is given both to the bones of the cranium and the orbit, and more room is left for the development of the lateral portions of the brain.

*Difference in different Animals.*—The orbit in our quadruped patients is different from that of the bimana or the quadrumana. It is an imperfect socket. In all of them it is so posteriorly, and in some of them anteriorly. In the horse and in the ruminant “the supero-anterior part, about two-fifths of the external circumference, is formed by the orbital process of the frontal bone—the infero-anterior part by the lachrymal bone, and the remainder by the malar and temporal bones.” The whole of the external ridge is bony. In the hog and all omnivorous animals, and in the cat and all carnivorous ones, cartilage is substituted for the orbital process of the frontal bone.

“Internally the floor is constituted of the orbital plates of the lachrymal bones—the sides by that of the frontal and by the os planum—and the back parts by that of the ethmoidal and sphenoidal bones, but with some slight difference of situation and connexion in different animals.” That, however, which chiefly deserves attention is, that it is *an imperfect socket*. The condyle of the lower jaw is found, and moving freely, in the postero-lateral part of it. A considerable quantity of adeps is also accumulated there; and, interposing between these substances and the eye, is a membrane or sheath, strong and thick, and thickest at the external and superior parts, where the eye would otherwise be exposed, and in which direction blows are most likely to fall.

*The Bimana and the Quadrumana.*—The food of the *Bimana* and the *Quadrumana* requires no extraordinary degree of mastication, nor is any great length of time employed by either of them in the act of mastication. Although the action of the temporal muscle—the one most concerned in the comminution of the food—is limited by the position of the bony socket of the eye, sufficient room is left for the full exertion of all the force that can be required.

*The Horse.*—It is different with the other species of animals. In some of them, several hours out of the four-and-twenty are occupied in the mastication of their food. The horse on his native pasture, and even domesticated and in the stable, employs a very considerable portion of his time in the grinding of his provender. There must be room for considerable development of the temporal muscle, in order that this may be accomplished without fatigue. Occasionally, and in his wild state, he needs his teeth for the purposes of offence and defence.

*The Ox.*—Nearly three-fourths of the time of the ox are employed in the first gathering or the re-mastication of his food; and ill would it fare with him, if the temporal muscle were not bulky and strong. We admire the mechanism by which this is accomplished without injury or inconvenience. The orbital sheath and the adeps sufficiently protect the eye from injury, while by their elasticity they scarcely offer the slightest impediment to the action of the temporal muscle on the coracoid process of the jaw.

*In the Omnivora and Carnivora.*—In some of our patients, for purposes of offence or of defence, or the more effectual grasping of their prey, a sudden and violent exertion of muscular power, and a consequent contraction and bellying out of the temporal muscle, is required, and for which the imperfect socket of the orbit does not afford room and scope enough. There is an admirable provision for this in the removal of a certain portion of the orbital process of the frontal bone on the outer and upper part of the external ridge, and the substitution of elastic cartilage. This momentarily yields to the swelling of the muscle, and then, by its inherent elasticity, the external ridge of the orbit resumes its pristine form. The orbit of the cat, the dog, and the pig, exhibits this singular mechanism.

*The Positions of the Orbits* differ in our different patients. They are placed at the side of the head, but the conoid cavity formed by the sheath of the orbit gives to all of them a prevailing direction forwards, so that, allowing for the action of the muscles presently to be described, the animal has a very extended field of vision. I cannot allow that the eye of the horse "commands a whole sphere of vision;" but it must not be denied that his eyes are placed more forward than those of cattle, sheep, or swine. He requires an extended field of vision to warn him of the approach of his enemies in his wild state, and a direction of the orbits somewhat forwards, to enable him to pursue with safety the headlong course to which we sometimes urge him.

*The Position of the Orbit in the Ox.*—The orbit of the eye has a more decidedly lateral position in the ox than in the horse, giving him a greater command of view on either side, but not so perfect in front; constituting, however, the field of vision which would

be most useful to him. Most of the breeds of cattle being armed with horns, the head, and particularly the forehead, of these animals is strongly formed. With this view it is pleasing to compare the comparatively thin orbital ridge of the horse with the thickened projecting quadrilateral one of the ox.

*In the Sheep.*—The bony structure connected with the visual organs is very different in the sheep. The frontal bones project considerably both forward and laterally, in order to afford in both directions sufficient space for the origin of the horn: therefore it is that the forehead of the sheep is so much broader, and the eyes have so much greater prominence, than in most other animals.

*The Situation of the Eyeball.*—That which Mr. Percivall says of the horse is true of our other domesticated animals: “The eyeball is placed within the anterior or more capacious part of the orbit—nearer to the frontal than to the temporal side—with a degree of prominence peculiar to the individual—and, within certain limits, variable at his will.

*The ferocious Look of the Carnivora.*—In carnivorous animals the orbit is much developed, and in some of them encroaches on the bones of the face. A singular effect is also produced on the countenance, both when the animal is growling over his prey, as well as when he is devouring it. The temporal muscle is violently acted upon; it presses on the cartilage that forms part of the external ridge—that again presses upon and protrudes the eye, and hence the peculiar ferocity of expression which is observed at that time. The victims of these carnivorous animals are also somewhat provided against the danger by the acuteness of sight with which they are gifted, and which will be spoken of in its proper place.

*The Protections of the Eye.*—The eye is well protected by a bony socket beneath, and on the inside, but is partially exposed on the roof and on the outside. It is, however, covered and secured by thick and powerful muscles, to be hereafter described—by a mass of adipose matter which is distributed in various parts of the orbit, and by the orbital sheath of considerable density and firmness, and, especially where it is most needed, on the external and superior portions.

This adipose matter exists in a considerable quantity in the orbit of the horse, and enables the eye readily to revolve by the slightest contraction of the muscles. By the absorption of it in sickness or old age, the eye is not only to a certain degree sunk in the orbit, but the roof of the orbit posterior to the frontal bone, being deprived of its support, is considerably depressed. I will not disgrace this lecture by referring to the rascally contrivance by which this indication of age is, in some degree, removed.

A greater mass of fat is found in the eye of the ox, and renders



this organ more prominent than that of the horse. The grazier and the butcher draw a favourable conclusion from this prominence of the eye. They regard, and rightly, this accumulation of fat within the orbit of the eye as a pledge of a similar propensity to fatten in other parts. The expression of the countenance in these animals should not, however, be quite forgotten. There must be no indication of ferocity or unquietness accompanying the protuberant eye, for if there is one point on which every skilful breeder has agreed, it is this, that neither the grazing nor the milking animal can have too placid a countenance, or be too quiet and docile in its habits.

We may now consider the diseases and accidents to which the orbit of the eye is exposed.

*Fracture.*—The first is fracture from accident or brutality. I have known it occur from a fall, but it is oftener to be traced to a disgraceful cause. Mr. Pritchard, in the second volume of THE VETERINARIAN, relates a case of it:—"A chesnut mare received a blow which fractured the orbit from the superciliary foramen, in a line through the zygomatic processes of the temporal and malar bones, to the outer angle of the eye. The detached bone, together with the divided integument, hung over the eye so as to intercept vision. On examining the place where the accident occurred, two portions of bone were found belonging to the orbital arch. After carefully inspecting the wound, and finding no other detached portions or spiculæ that might wound the adjacent parts, the skin was carefully drawn together over the orbit, and two pins of silver wire, forming a twisted suture closed this part of the wound, and sufficiently secured the detached portion of bone in its proper place. A mash diet was ordered.

"On the following day considerable inflammation had taken place, and the eye was completely closed. A dose of physic was given, and fomentations of tepid water frequently applied.

"On the next day the inflammation and swelling had increased. Blood was taken from the angular vein, and a seton passed over the cheek from the condyloid process to the inferior angle of the posterior maxillary bone. The fomentation was continued.

"The swelling and inflammation now speedily abated. On the fourth day after the accident the sutures were removed, and the eye was found clear and transparent. On the fifteenth day the wound had quite healed."

Of the bony defence of the eye the orbital arch is the part most liable to fracture, or, indeed, almost the only part susceptible of it. It is seldom that the whole of the arch is fractured, but most frequently they are cases similar to that of Mr. Pritchard, yet not

so serious, and in which the fracture does not extend beyond the anterior edge of the arch. I am speaking now of the horse.

M. Leblanc has had great practice, with regard to these accidents, among the horses drawing the hired vehicles of Paris. An abbreviation of his excellent remarks will not be unacceptable to you.

He has never had a case of complete fracture of the orbital arch, but he has seen many in which the injury has been confined to its edges, or a very little way beyond. If a complete cure has not been effected, from neglect of perfect reduction of the fracture, at least complete loss of sight has never occurred: he should regard a case of complete fracture as exceedingly dangerous, especially if any of the nervous branches which are here distributed should be injured; nor does he think that the bulb of the eye could escape unharmed after a concussion sufficiently great to produce fracture of the arch.

Partial fractures of the arch are the more frequent, because the bone is there covered by little more than the simple integument. Although he has never seen actual loss of sight produced by this accident, he can readily imagine that it may occur when there was some inflammation or predisposition to inflammation in the organ. I can believe that it may favour the development of habitual fluxion from the eye, and, generally speaking, aggravate every disease, or tendency to disease, that may have previously existed.

The existence of this kind of fracture is readily determined, by introducing the thumb under and pressing the fore-finger upon the edge of the orbit, where the blow seems to have fallen, or any deformity appears.

The mode of treatment recommended differs very little from that adopted by Mr. Pritchard—the replacement of the fractured parts, the application of the suture, frequent fomentations, low diet, and aperient medicine.

I have seen several cases of sad contusion on the forehead of the ox, but not one of fracture; and yet I have often been told, and I have so written, that fracture of the superciliary arch is more frequent in the ox than in the horse. I have already said, that as this is a part particularly exposed to danger, nature has bestowed on it sufficient strength to bid defiance to accidents of this kind; but I shall have to speak of other evils resulting from violent blows on the orbital arch of the ox.

We should scarcely expect often, or at all, to meet with cases of fracture of the orbital arch in the dog, because in that animal cartilage, or a cartilago-ligamentous substance, occupies a very considerable portion of that arcade; but I have again and again, amidst

the atrocities that are practised on the inferior creation, seen that cartilage partly or even entirely torn asunder. I have never been able satisfactorily to ascertain the existence of this during life, but I have found it in those whom I had recommended to be destroyed on account of the brutal usage which they had experienced. Blows somewhat higher, and on the thick temporal muscle of this animal, will very rarely produce a fracture.

*Exostosis.*—This has not been often observed, either on the orbital arch, or within the orbit in the horse, but it is of too frequent occurrence in cattle. I have sometimes thought that there was a constitutional tendency to it, or there was that in the lax construction of the bone of the ox which disposed to the formation of bony tumours from causes that would have had little or no effect of this kind in the horse. The different consequences of inflammation of the joints in the two animals is a sufficient illustration of this.

*Its Frequency abroad.*—There are few practitioners on the diseases of cattle in England who have not been occasionally annoyed by these exostoses; but, in France, whether from constitutional predisposition, or from the greater degree of ill usage to which this animal is exposed, it is far more prevalent. I refer again to the valuable work of my friend, M. Leblanc, on the Diseases of the Eyes in Quadrupeds, in proof of this. He says that the ox is oftener exposed than other domesticated animals to exostoses about the eyes, on account of the slighter resistance which the bones of this animal offer to the frequent contusions which they almost daily receive. I have also remarked that the facility and the promptness with which these exostoses develop themselves have a more or less direct relation with the previous state of the part and the constitution and health of the animal. When there is no pre-existent irritability of the part, and no constitutional affection, the exostosis usually terminates in simple induration of the part; but, if there has been previous local injury or constitutional disease, the result will too often be *osteosarcoma* and *caries*. This is the usual history of diseases of the bones in the ox.

*Idiopathic Exostoses* behind the eye are incurable. Those which are situated anteriorly may be removed if they are pediculated, and occupy the superior part of the arch of the orbit; but others will yield only to some topical energy of the absorbent system, produced either by the cautery, or, what is far more efficacious, frictions with iodine.

*The Power of Iodine.*—In the work on "Cattle," written for the Society for the Diffusion of Useful Knowledge, I described a method of advantageously applying the cautery, for the reduction of tumours, without producing blemish on the part; but my almost



uniform experience since that time has been in favour of the iodine, for the dispersion of these small isolated osseous tumours. The addition of a very small quantity of mercurial ointment to the iodine has almost uniformly increased its efficacy.

*Caries.*—Exostosis on the orbital arcade is too frequently the forerunner of caries. The inflammation of the bone runs on to abscess, and the progress of this is uncertain as to time, but inevitable as to its character. The bone becomes hollow and cavernous. It is filled with fungous growths, which gradually elevate themselves above the surface. The caries extends, and, in a short space of time, destroys a considerable mass of bone. When this is evidently apparent, and the eye exhibits intense inflammation and begins to protrude, no possible good can be effected, but humanity and interest equally require that the sufferings of the animal should have a speedy termination.

From the peculiar prominence of the forehead of the sheep, the orbit of the eye is occasionally fractured. I have seen repeated cases of it in our streets. If the fracture is serious, the animal should be immediately destroyed. If there is little displacement of the bones, nature may eventually set all right; but it should be recollected that this will require a considerable portion of time, during the whole or the greater part of which the animal will be suffering: then comes the question, whether both interest and humanity do not require the speedy destruction of the sheep.

*Puncture of the Wall of the Orbital Cavity.*—There are cases on record,—for the sake of humanity we rejoice that they are but few,—in which a ferocious scoundrel has plunged his pitchfork deep into the eye of the horse and the ox, and not merely wounded the eyelids or the conjunctiva, but the point of the fork has penetrated through the bony laminae, at the back of the eye, and on the inner side of the orbit. This will rarely, indeed, be perfectly effected, because the orbit is deficient, as we have already described, both at its outer side and its base. How shall we ascertain the injury that is actually done? It is absurd to attempt it, for by no power can the eye be so fixed that a probe shall pass through the original puncture. Every muscle will be at work to frustrate our purpose, and all that we shall do will be to torture the patient and strangely increase the inflammation.

*Treatment.*—If the point of the instrument has penetrated through either of the lids, and considerably lacerated it, we must endeavour to close the wound by the first intention; and then all our efforts must be confined to the abatement of inflammation, by bleeding, purging, spare diet, and the constant application of a poultice or fomentation. This would take place if the horse were the patient. Although he would experience most acute and long-

continued pain, and suffer considerable loss of condition, yet he might hereafter be useful to us, although blind in that eye: but if the unfortunate animal should be a sheep or an ox, and in fair condition, humanity would, in almost every possible case, demand his immediate destruction.

When there is evident and deep puncture of the eye, the tepid lotion or the poultice should be abundant in quantity, and extend over the whole of the head of the animal. General and violent fever will oftentimes be the consequence of an injury like this. After awhile, however, if the case goes on prosperously, the lids which were protruded and swelled will gradually become a little relaxed, and, by degrees, a portion of the bulb of the eye, hitherto hidden, will be seen. Let no attempt be made violently to force them open, but await with patience the subsidence of the inflammation and the swelling. The cornea will be found obscure, the wound not yet closed. Now will be the time for the gradual disuse of the emollient applications, and the cautious trial of astringent ones. This, however, will be the subject of consideration in a future lecture.

In a majority of cases, even although the point of the fork may have penetrated the eyelid, and may have grazed the lucid cornea, or the sclerotica, it will glance off from the bulb of the eye, and continue its course to the back of the orbit. The form, and appendages, and mobility of the eye, and the mass of fat by which it is surrounded, will readily account for this. The direction of the weapon is changed by the turning of the eye, and it passes on to the outer angle, or the superior part, where there is no dangerous spot, or to the inner angle of the orbit, where danger must attend its progress, supposing that it reaches the bone. The yielding resistance, however, which it has experienced in its way—that resistance which is the most certain and effectual—will generally have arrested its progress ere it can penetrate to the recesses of the orbit. It must be left to time to develop whether the bone has been reached, and in what direction, and with what effect: and here again I would urge you never to have recourse to the probe. You can never draw from it any legitimate conclusion, but you will increase the inflammation and the pain.

M. Leblanc relates two cases of wounds in the eye of the ox with a fork. In the first he found his patient, three days after the accident, in a most alarming situation. The eye was closed, and dreadfully swelled; the pulse was hard and quick, and the fever of reaction extreme. He adopted the most decisive treatment,—he bled and physicked, and fomented. On the eighth day the eye was nearly protruded from the orbit. He plunged his lancet into it, and a great quantity of mingled purulent and bloody matter

escaped. In about a month the animal was dismissed; but it had lost an eye, and the socket was filled by an exostosis, springing from a wound which the fork had inflicted on the bone of the orbit.

In the second case there was the same tumefaction, but particularly evident towards the inner canthus of the eye: the symptomatic fever and the treatment of it were the same. The animal died on the eighteenth day. The meninges of the brain were double their natural thickness. At the origin of the optic nerve were black vegetations which evidently compressed it. The plexus choroides were much enlarged, and of a black violet colour, and the ventricles were filled with a red fluid.

The parts in the neighbourhood of the suture which united the frontal and lacrymal bones were contused, a sufficient proof that the blow had been violent, and inflicted by a sharp instrument.

Hurtrel D'Arboval has placed a very encouraging case on record. The upper part of the superior maxillary bone and the zygomatic arch were broken in a horse by a kick from his companion. The eye was forced from its socket. M. Revel, a skilful French veterinary surgeon, carefully removed every splinter, replaced the bones in their natural situation, returned the eye to its socket, and by a very simple course of treatment effected a complete cure in six weeks. A cure so radical, and with so little effort, seems very extraordinary, especially when the concussion which the brain must have experienced from so tremendous a blow is taken into consideration. It is time for us to pause.

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## THE COMPARATIVE DISEASES AND LAMENESSES OF THE FRENCH AND ENGLISH HORSES.

*By* NIMROD.

*To the Editor of "The Veterinarian."*

Dear Sir,—OWING to the sort of roving life I have lately been leading, it has not been in my power to perform my promise of giving you my opinion on the comparative amount of disease and lameness in the horses of my own country and those of France. It appears to me to be greatly against the former; and I am enabled to speak on no slight experience. I am now entering on the eighth year of my residence in this country, during which time I have not only been a close observer of the horses in my own neighbourhood, together with one or two of my own under my eye,



but I have taken many long journeys in diligences, when, my place having always been in the *coupe*, for the purpose, partly, of observing the horses at work in them, I am enabled to produce facts, which are greatly preferable to theory.

I will begin with diligence horses. I have only seen two broken-winded horses at work in them; only one high-blower, and not one roarer. Your worthy Professor, be it remembered, saw only one broken-winded horse in a journey of several thousand miles on the continent. But I do not see three in the year, in the farmers' carts, or in those of the public carriers, which are very numerous here; or in the carts of those men who get their living by carting goods for hire, which are also numerous; or among the hackneys ridden to market by the farmers. As to roarers, although the word *poussif* is used to express broken-wind, I doubt whether one to express roaring would be found amongst the generality of French horse owners, from the rarity of the complaint. Then, lame horses! how rare they are in France; those lame in the feet especially! "But cannot you account for it?" said a friend of mine to me the other day, who is a clever mechanic. I replied that "the comparatively slow pace at which French horses travel must have very much to do with it." "No doubt it has;" was his reply: "but, depend upon it, the French system of shoeing contributes much to their soundness, as far as the feet are concerned by the superior method of *nailing*. With us, the nail must go as the nail-hole gives it the direction. Here, the smith can drive it in that direction which he thinks best suited to the peculiar form of the foot, because the nail-hole is large enough to afford him this choice." Surely, Mr. Editor, there must be some charm, some talismanic effect in this French shoeing. It is enough to give one the horrors to see a French smith—I beg his pardon, a French *marechal*—cutting away at a horse's foot with a buttress a yard long, and impelled from his shoulder with an Herculean force. Then, look at his shoe; it is a combination of bad workmanship with clumsiness; and, to produce the climax, see him standing behind the foot, hammering in nails after the manner of a carpenter when driving them into an oaken plank! But to what part of the foot is the buttress employed? To the sole? yes. To the frog? a little. To open the heel? *never*; neither is a drawing-knife to be found in his box. And, then, the foot, after this unwieldy piece of iron is affixed to it, is any care taken of it in the stable? Is it stopped? why, the word "stopping," as applied to horses' feet, is not in a Frenchman's vocabulary: and physic! "Do you never physic your horses?" said I to Mr. Roberts, of the Royal Hotel, Calais, who once kept the White Horse, Fetter Lane, London. "I did so, when I first came to France," he replied; "but, finding no one

else did it, I left it off, and my horses do quite as well without it." "Have you lost any horses from disease?" renewed I; "Not one; only one has gone blind; and his eyes were suspicious when I bought him,"—was his answer. Now, what is the talisman here? how is it that out of four druggists in Calais, only one can make up a dose of purging physic for a horse, and this because he is the one chiefly employed by the English residents? I answer, it is the wheat-straw, and the bran, or the dreadfully (apparently so at least) bad system of making the hay in France, that cause a diminution of disease in horses in this part of the world.\*

But I must return to the foot. I see no corns in France, and, what is more extraordinary, I can hear of none. "Have your horses corns?"† is a question I have put to many Frenchmen; and have only created their surprise by asking it. Indeed, one told me he was not aware horses ever had corns: and my "mechanical friend" informs me, that, when he arrived from England, two years ago, three of his four horses had corns; but they have all disappeared by the charm of the French blacksmith. All that I can here add is, "Look to this, ye professional gentlemen of England. It is worthy your consideration. Examine also into the question, whether the growth of splents, so frequent in English horses, and so, comparatively, unfrequent in French ones, has any thing to do with the tread of a horse, and whether or not the form, the position, and the nailing of the clumsy French shoe, have the effect of not producing these often troublesome though seldom serious excrescences." Speaking of the horses in Brittany, the late Lord Harley, in his excellent contribution to the old *Sporting Magazine*, under the signature of the *Old Forester*, has this remarkable sentence: "One thing struck me forcibly, and that was, that although worked hard early, and knocked about on bad hilly roads, you never see nor hear of such things as splents, curbs, thoroughpins, or spavins." In young horses—colts—I am certain the *tread* has much to do with the production of splents, and when I saw so many on the legs of the young racing stock of Lord Henry Seymour, at his stud-farm, near Paris, three years back, I accounted for them by their galloping *across* their paddocks, which are on ground of somewhat considerable descent. Now, as Lord Harley informs us the horses of Brittany are ridden when young, and on bad and hilly roads, it is difficult to account for the absence of splents, unless

\* I have something to say on the subject of hay, in my next letter.

† "There are corns," says Mr. Spooner, "of every shade and degree, from the slightest speck of ecchymosis to the most serious evil;" so it is possible the French smiths find some occasionally, but not sufficient to cause lameness.

it be traced to the firmer and more even, or, rather, peculiar tread, afforded by the French shoe.

I have just examined the position and nailing of the fore shoe of a four-year-old horse now in my stable, and the following is the best description I can give of it. Across the widest part it is four inches and a half, and at the narrowest (the heel) it is three and a half. There are eight nails in each shoe, none within two inches of the heel on the outer side of the foot, or within two inches and a half on the inner, and no one nail comes out more than an inch from the bottom of the hoof. The ground surface is quite flat; a parallel plane, indeed; the inner one, to a certain extent, seated. From the length of the shoe, which from toe to heel is four inches and a half, with the heel resting upon it, it is evident there is no want of sufficient pressure at the posterior parts of the foot, which is said to produce disease; and the cause of the evil, from driving the nails so far backward as to render (as it is said to do), both the crust and horny sole fixtures, as well as to prevent the descent of the navicular bone, does not here exist.

I now take my leave of the foot, with only this observation. As we hear so much of foot-lameness in Great Britain and America, and so little of it in France, is it not reasonable to suppose that, if the difference in shoeing, in addition to the difference of pace, has any thing to do with it, the cause, as relates to this difference, is well worthy of consideration? What I now assert detracts nothing from my former assertions—that, shod how they may be, and not shod at all, feet will go wrong, exhibiting all the diseases and deformities to which they are subject; that fact having been too clearly proved by the wretched state of several seen by Mr. Tattersall and myself, in Germany and Prussia, to which shoes, buttresses and drawing-knives had never been applied. For my own part, were I to become proprietor of a large stud of horses in England, *not* hunters or race horses, the first thing I should do, would be to import a good French shoeing smith.

Now I have often asked myself this question? Had any one said to me, only ten years back, "What do you think of good wheaten straw for stable purposes?" what answer should I have made? I should have replied, "It is the best of all other sorts for bedding down horses, because it is the cleanest and most free from dust and weeds; and I have no objection to see my horses pick some of it when it is first put under them." Then, suppose another had said, "What do you think of it as an article of food for horses? do you think you could bring a race-horse to the post in fit condition to run, on wheaten straw and corn?" my answer would have been, "In all my own experience in the keeping of



horses and cattle, I never heard but one farmer say that wheaten straw was the best straw for *cattle*." But to the question as to training horses upon straw instead of hay, I should only have returned a smile. Well; see what a change has eight years' residence in France wrought upon my opinions and experience on this subject! I am now not only convinced that, to the fact of horses in France eating as much wheaten straw as they do hay, is to be attributed their generally healthy condition, and also the non-necessity for physic, even to those who work hard and eat much corn (post and diligence horses for example); but I was informed by Lord Henry Seymour, at Paris, last March twelvemonth, that his race horses, then of course doing good work, were eating nothing but wheaten straw and corn. Casting this circumstance aside—it being a system that I cannot countenance, although obliged to give credit to the individual fact—it is my sincere conviction that, putting what we consider a high state of condition out of the question, the comparatively more healthy state of French horses over our own is to be attributed to the alterative properties of good wheaten straw, together with the occasional use of bran, either mixed with their food or water. From all I can learn, neither staggers nor gripes is at all prevalent in France; and although what we call *condition* is a point neither considered nor attempted by the owners of French horses, the appearance of them, for the most part, is indicative of a high state of mere bodily health, and they live and work—in the agricultural world especially—to a very great age. On this particular point I have an anecdote that may make some of your readers smile. There is a carrier's horse in my neighbourhood who works daily at the age of thirty-three; but before he commences his labours, he has a gill of brandy given to him! And yet what is the gill of brandy, with reference to out-of-the-way proceeding, when compared with the following *miracle*, as it may be termed, which was performed last winter on a horse working in the Boulogne Telegraph coach, the truth of which may be confirmed by applying to the proprietor, Mr. Oswin, of Calais, as it occurred in his stables. The horse in question was suffering severely from colic, when the coachman, a Frenchman, administered his never-failing specific. And, Reader, would you ever guess what this specific is? I answer for you, "*Never*." He took out his knife, cut off that little corneous excrescence which has the appearance of a large wart on the inside of the forearm, and, chopping it very small, let it drop into the ears of the horse. In ten minutes all pain ceased; in another ten the horse was asleep; he slept for more than half an hour, although there were persons moving in the stable; and he went to his work the next morning as well as ever he was in his life!

This approaches in the catalogue of extraordinaries to the whispering specific for restiveness in Ireland, the reality of which is, I believe, no longer disputed.

The rarity of blindness in French horses must be the result of some part of their treatment—probably the frequent, if not daily partaking of wheaten straw and bran. It may also be attributed to the circumstance of their being so generally kept in the stable when in work, and consequently not subject to the effects of determination of blood and humours to those parts, from the downward position of the head, to which so many of our horses, those of farmers especially, are subject, after having had their system heated by work during the day; and likewise principally, I should say, to their seldom passing the night in the fields when working, which so many of our farming horses do.

I have not seen a case of glanders since I have been in France, and only two of grease. The general absence of grease (for general it is, and wonderfully so considering the little grooming French horses have) may, to a certain extent, be laid to the absence of the trimming scissars, which are here never applied to the heels, neither is there any washing of legs in cold weather. The stables in France are strangely inferior to ours; but I have observed that a current of air is never permitted, which is a prolific source of glanders and grease. What are called megrims is a disorder little known in France—at least, I have not been able to hear of a single case amongst road coach-horses. This may be accounted for by the lax state of the intestines, which the food of French horses causes. Neither can I produce a single case of staggers, which may be similarly accounted for. Poll-evil is also rare. I have only seen one case. The kind treatment of the drivers of cart-horses may have something to do with the infrequency of this disease, as well as the good state of the blood from the alterative nature of the food, which latter circumstance renders farcy one of not common occurrence in this country. On the other hand, the disease called Anticor is somewhat prevalent among French horses. As this is a complaint, to a certain degree, connected with the state of the blood, it would appear that, the form of the French horse, who is very fleshy in his fore parts, may tend towards its frequency. Drinking cold water when the animal is hot is also one cause, and on this point owners of horses appear to me to be somewhat inconsiderate.

As to the prevalence or absence of thrush in French horses, I am not able to give an opinion, the disease not being perceptible to common observation, *en passant*. I do not recollect above two cases; but of ring-bones, and of sandcracks, I have seen none. The absence of both these may, in part, be laid to the generally open form of the feet of French horses, which secures the articulation of

the coffin and pastern bones against injury. The bearing of the French shoe also, as well as the comparatively cool state of the system, may contribute to this blessing—not forgetting the comparatively slow rate of travelling, with that of our country.

String-halt is very rare indeed in France. If it be brought about, as it is said to be, by over-action of the hinder leg, we might expect it here, in horses which are taught to run, or “amble,” as the exertion in that pace is chiefly from behind. I have seen no case of string-halt in France; very few spavins, and very much fewer windgalls than are seen in our country.

What may be called epidemics and strangles prevail, I believe, everywhere; and the former, I have reason to believe, more fatally on the Continent than in England. With colts which are exposed, as they are in most countries, but less in England than in any other, to the unhealthy influence of certain seasons, we cannot be surprised at their being liable to the natural consequences; but with those not exposed to atmospheric vicissitudes, we can only attribute certain diseases to some unknown atmospheric agency, and which agency will ever remain unknown. For example: Two years after I purchased the Arabian stallion Buckfoot, of Mr. Thornhill, of Oxfordshire, for the King of Prussia's stud, at the price of £500, I wrote to the Master of the Horse to ask how he was going on? He replied, that, together with eleven other stallions, he had fallen a victim to an epizootic that had raged in the stud! It is somewhat singular, however, that the produce from Buckfoot amounted to seventy-three colts and fillies, *all of which were grey*, his own colour being milk-white on a black skin.

Cases of inflamed lungs are much more rare in France than with us, which may be owing to the generally large French stables, which admit plenty of air, but *not*, as I have before said, *by a thorough draught*. This remark leads me to the recollection of a drawing and description of a self-adjusting ventilator for the use of stables, which was sent to me by Mr. Newland, V. S., of Stratford-on-Avon, and which appeared admirably suited to the purpose of purifying the air, and thus getting rid of the most prolific cause of this dangerous disease—namely, foul air. The chief merit of this instrument consists in its working being regulated by the change of temperature, with the same regularity as the thermometer; and it was my intention, had I been permitted to have done so, to have noticed it in the pages of the *New Sporting Magazine*, as a sort of safety-valve in stables containing large studs.

There is one property in French horses which I very much admire, and that is, their docility. Since I have been in France, with the exception of young racing stock, I have not seen a colt in what is called “breaking tackle.” This, in some measure, arises



from the sort of *domestic* treatment they receive in the first year, when they are petted, as it were, by their owners; but chiefly to their being naturally better tempered than our horses are. In some of my descriptions of journeys taken in French diligences, I have related extraordinary instances of the docility of their horses, and I saw a striking one last month, when on my road to Chantilly races. Looking out of the window of the *coupé*, just as the morning dawned, I found we were descending a long and somewhat steep hill without the wheel horses' heads being coupled together, the driver having omitted to couple them. With English horses, an accident must have happened; but the two fine-tempered, white stallions spread themselves out, of their own accord, to the extreme length of the pole chains, at the encouraging voice of their driver, who kept crying out, "Wo!" and all at last was right. I had an instance of this property, a short time back, in a four-year old French horse of my own. Having had him since he was two years old, I can answer for his never having had a collar over his head; but, convinced of his docility, the first time I put him in single harness (about a month back) I put three small children into the carriage, and safe enough they were; for in half an hour he appeared to be quite at home. Then the durableness or stoutness of French horses is not less extraordinary. You will see a pair of miserable looking animals leave Calais in a hired barouche or coach, and none of the lightest of its sort, in the morning, with six persons inside, and a lot of luggage on the roof, and return to Calais in the evening, after having deposited their load in the town of Boulogne, Dunkirk, or St. Omer, making a good fifty miles of ground; and they will do this three or four times in the week. Indeed, there is a heavy coach running from Calais to Boulogne (not the Telegraph) which is drawn by only three horses, who go the entire distance, twenty-four miles of very heavy road. This, I confess, puzzles me; and although unwilling to draw a comparison unfavourable to my own country, I doubt whether English horses in their low condition, and on their food, would be found to do this, and stand the work long enough to remunerate their owners. I can only account for French horses doing it by the fact of their *combining strength with action*, to a superior degree to those of the lower breeds of English ones. Where, indeed, in England will you see what is every day seen here—a man take a powerful horse out of a cart, and *gallop* him along the road at the rate of twelve or fourteen miles in the hour? This description of horse, the light cart horse—light, yet very strong; on very short legs, and not more than fifteen hands in height—is far superior to any thing we have in England for such purposes as those for which he is used. Look, for example, at the horses which

run in the carts that convey fish to Paris! What English *cart*-horses would go their pace (considerably faster than that of the diligences) and keep up their good looks as they do? Then, what admirable animals are the black roan stallions we see on the roads leading from Paris, drawing the public carrying waggons! We have nothing in England that can at all compare with them in any one respect. They will out-walk our horses by a mile in the hour; and would live where ours would starve. I have often expressed my surprise that we do not avail ourselves of a cross from this excellent breed.

In my next, I shall touch upon a few subjects relating to various studs I saw during my late tour in the midland counties of England, in the course of which I hunted with eleven packs of fox hounds; concluding this paper with an observation on the management of milch cows in France. I have not seen an instance here of a cow losing a teat; and this is accounted for, by all cows being milked three times in the twenty-four hours, instead of twice, as with us, during those months when the grass is at its best. Out of fifteen or sixteen cows, I scarcely ever knew a year pass over without one or two of mine being thus blemished, and from the cause to which I have alluded, namely, suffering their udders to be over-distended with milk.

NIMROD.

## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMAN and GMELIN, of the University of Heidelberg.*

### RUMINATION.

*The Changes which the Food undergoes in the Maniplus.*—The food which reaches the stomach after being submitted to a second mastication, and also that which passes directly into it from the paunch and the reticulum, after having been softened in these two pouches, is distributed between the numerous leaves which are found projecting from the internal surface of this viscus.

We have found in calves, only a little portion of the caseous matter of the coagulated milk. In full-grown cattle there has been a homogeneous *bouillie* of a deep grey colour, composed of particles of straw and hay, softened, and in a minute state of division, and disposed, in exceedingly thin layers, between the leaves. The third stomach of the sheep fed on grass contained a pulpy homogeneous mass of a deep brown colour. In a sheep that had been fed on hay there was a brown mass composed of hay and woody fibres, and which was ranged in layers between the leaves.

In another that had been fed on oats, the maniplus was filled with a somewhat dry thick paste, of a greyish-brown colour, composed of the farinaceous substance of the oat.

The contents of the stomach reddened the tincture of turnsole in the calf, the ox, and the sheep. On chemical analysis, they contained *free carbonic acid* in oxen and sheep fed on straw. *Free acetic acid* in sheep fed on oats or straw, and also in calves. *Carbonate of ammonia* by the distillation of the contents in oxen and sheep fed on grass. *Acetate of ammonia* in oxen and sheep fed on straw, and in a calf. *Albumen* was only found in calves and sheep fed on oats. *Matter precipitated by the chloruret of tin* was abundant in the maniplus of oxen and sheep. *Matter which was reddened by hydrochloric acid* was produced by distillation of the contents of the maniplus of oxen. Incineration of the contents of this stomach produced the following fixed salts :

	Alkaline Carbonate.	Alkaline Phosphate.	Alkaline Sulphate.	Alkaline Chloruret.	Carbonate of Lime.	Phosphate of Lime.
The ox.....	3	5	1	3	3	1
Sheep fed on grass...	3	5	1	5	1	4
do. on straw.....	3	4	2	4	1	4
do. on oats.....	3	5	1	5	1	4

The office which the maniplus discharges in digestion seems to be this : The food, broken down by the second mastication, and a second time saturated with saliva, is spread between the numerous leaves of this viscus, where it undergoes, during the contraction of its muscular tuniic, a pressure which forces out the liquid part, and propels it into the abomasum. What strengthens this conjecture is, that the layers of food interposed between the leaves of this viscus are almost dry. The portions remaining gradually become decomposed to such a degree, that the numerous hard papillæ which are so numerous scattered over the leaves, gradually comminute or pulverize them, and so they are carried away. It also is not unlikely that the portions of food which have been dissolved in the alkaline liquid of the first two stomachs are absorbed in this. Finally, the parietes of the stomach seem also to secrete a fluid possessing acid properties.

*The Changes which the Food undergoes in the Abomasum.*—The food is always found in this stomach converted into a *bouillie* more or less liquid, as has been observed by the earliest physiologists.

The abomasum of the calves which we have examined has been entirely filled with coagulated milk exhaling a sour odour. There was also a pale yellow liquid, with some softened masses of curd. In that of oxen we have found a soft *bouillie*, nearly fluid, of a brown-yellow colour, containing some bits of hay, and grains



of *spell*. These grains were quite softened, and, on pressing them, a white milky fluid escaped.

In a sheep that had been fed on grass, the stomach was filled with a brown-yellow fluid, in which floated some small flocculent fibres. The stomach of another that had been fed on hay contained a thicker fluid, composed of small fibres, and a white-brown milky fluid. The abomasum of a third, that had been fed on oats, was filled with a liquid *bouillie* exhaling a pungent and disagreeable odour. This *bouillie* was composed of a farinaceous pulverized sediment, some small masses of oats, and a yellowish-white fluid having the consistence of milk. The fourth stomach of another sheep that had been fed on oats, and that died after the pancreatic juice had been collected from it, contained a yellow-brown liquid of the consistence of milk, and which deposited a flocculent sediment.

The substances which we found in the abomasum of all the animals that we examined contained a free acid, and deeply reddened the tincture of turnsole. They were alkaline only in the sheep that died after our experiments upon it, and which we attributed to the painful operation to which we had subjected it having diminished the influence of the nervous system on the gastric juice. The acidity of the fluid contained in the abomasum has been observed by the majority of experimentalists. Bourdelin and Duverney had, long ago, remarked that the tincture of turnsole was reddened by it.

If this stomach is washed it still possesses the same property. If some chymists have found the gastric juice of ruminants at one time acid and at another alkaline, it is because they have not been sufficiently careful in collecting the contents of the different stomachs, and because they had not dreamed that these liquids might present different characters in the different pouches in which they were enclosed. The acidity of the fluid contained in the fourth stomach is also proved from its being the agent by means of which the milk received into the stomach is coagulated.

We have found the following substances in the abomasum of the ruminants which we have opened :

1. *Acetic Acid*.—This existed in a considerable quantity in the fluid expressed or filtrated from the abomasum of some calves, and oxen, and three sheep fed on grass, hay, and oats.

2. *Hydrochloric Acid* in a small quantity in sheep fed on grass and on straw. As the fluid in the fourth stomach of calves and oxen yields an alkaline carbonate by incineration, it is not possible that it should contain any free hydrochloric acid.

3. *Butyric Acid* in calves, oxen, and sheep fed on hay.

4. *Carbonate of Ammonia*.—This was found only in the aboma-

sum of a sheep that had the hoove, but it existed in a very large quantity.

5. *Acetate of Ammonia*.—This was found in the calves and oxen, and the three sheep. The hydrochlorate of ammonia may also exist in a considerable quantity in the fluids contained in the abomasum; for the carbonate of ammonia which we find in the first stomach would be decomposed in the fourth by the hydrochloric and acetic acids that are secreted there.

6. *Albumine*.—This was very abundant in the filtrated fluids of the abomasum of some calves and oxen, supposing always that this was not the caseous matter found in the first of these animals. In the sheep with hoove there was a moderate quantity. Those that had been fed on oats and grass yielded but a small quantity, and in the one that was fed on straw there was not the smallest quantity. This matter seemed to have been extracted from the softened food. That which was met with in the sheep that died after the extraction of the pancreatic juice was a morbid secretion.

7. *Matter turned red by Hydrochloric Acid*.—This was obtained from distillation of the fluid from the abomasum of cattle, and also of the sheep that died after the operation.

8. *Matter precipitable by the Chloruret of Tin*: of this we found a great quantity in the abomasum of all the sheep.

9. Incineration of the infiltrated fluids will produce the following salts:

	Alkaline Carbonate.	Alkaline Phosphate.	Alkaline Sulphate.	Alkaline Chloruret.	Carbonate of Lime.	Phosphate of Lime.
Beef.....	3	5	1	3	3	1
Veal.....	2	3	0	4	1	5
Sheep fed on grass..	0	1	1	5	1	4
do straw.	0	3	2	4	2	3
do oats....	2	5	1	5	1	4

As the abomasum contains certain free acids resembling those which we have found in the stomach of the dog, the cat, and the horse, we have a right to conclude that the aliment is digested there, or dissolved and converted into chyme. The three first stomachs only prepare it for the digestion which takes place in the fourth. This agrees with numerous experiments recorded by Reaumur in the Memoirs of the Academy of Science, and repeated and confirmed by Spallanzani.

*The digestion of the Food*, whether in animals possessed of a simple stomach, or in this fourth stomach of the ruminant, consists in their solution by means of the gastric juice. Whatever be the aliment, simple or composed of different constituents, it is dissolved. All physiologists unite here; but they have not agreed upon—they have not discovered the cause of—this solvent property, nor the aid

which any particular agent lends to the accomplishment of this object. The most distinguished chemists have frankly avowed their ignorance on this point.

The gastric juice of dogs, and cats, and horses, and the fluid in the abomasum of ruminants, is of an acid character. That acidity is the same whether the mucous membrane of the stomach is stimulated by mechanical or chemical agents, or by the accumulation and impression of food. The acids which are found in the gastric juice are the acetic and hydrochloric, to which, in horses and cattle, may be added the butyric. It is a question, even at the present day, to what the gastric juice owes the solvent property which it exercises on the food, and whether it is indebted to the acids which it contains for its power of dissolving the principal simple nutritives.

The water which the gastric juice contains effects the dissolution of many simple aliments which are soluble in that fluid; such are uncoagulated albumen, gelatine, osmazôme, sugar, gum, and starch. The solution of these substances is accelerated by the heat of the stomach, and it should be rapidly accomplished at a temperature of 96 Fah.

The acetic and hydrochloric acids which enter into the composition of the gastric juice dissolve many simple aliments, which are not soluble in water, as concrete albumen, fibrine, coagulated caseous matter, gluten and gliadine—a substance analogous to gluten, and which is found in many of the legumina and cerealia. They also effect the dissolution of the cellular textures, membranes, tendons, cartilages, and bones. As the dissolving of these substances, out of the body, is accelerated by heat, it has the same effect within the stomach, where they are continually exposed to a high temperature.

During their solution, many of the alimentary substances undergo a species of decomposition. Starch in the act of dissolving loses its property of colouring iodine blue, and is converted into sugar and gum. Something analogous to this takes place with regard to many other substances. Perhaps these modifications do not entirely depend on the free acids which the gastric juice contains, but on matters analogous to saliva and osmazôme, which that fluid possesses, for gluten exercises an analogous action on starch.

Chemists have not come to any satisfactory conclusion on the solvent action of the butyric acid on simple aliments; but as it is found in the gastric juice of the horse, and in the fluid of the abomasum, it is fair to presume that in both it possesses the property of dissolving the alimentary substances.

If the gastric juice, which the living stomach secretes from the blood, in consequence of a stimulus exercised on its parietes, owes to the water, and the acetic and hydrochloric acid, and the different



salts which it contains, the chemical property of dissolving simple aliments, it is clear that it can exercise the same power over the compound aliments, in which chemistry shews us nothing more than the simple nutritive materials differently combined with one another.

As to what relates to the digestibility of the different aliments, according to this theory they are more easily and quickly digested in proportion as their peculiar composition renders them more soluble in the gastric juice. Then sugar, gum, liquid albumen, and gelatine, are easy of digestion, because they most readily dissolve in warm water. Aliments that require the aid of acids to dissolve, as those which contain much gluten, concrete albumen, fibrine, and caseum, are difficult of digestion; while substances which the gastric juice cannot dissolve, as the hard fibres of plants, or of wood, the envelopes of certain leguminous seeds, the kernels and the stones of fruit, hair, feathers, &c. are indigestible.

The absolute digestibility of aliments depends on their properties and their composition: but there is a relative digestibility also to be distinguished, as it regards the composition and solvent power of the gastric juice of different animals. In general the gastric juice of the carnivora is much less active than that of the herbivora. This enables us to understand why the former can well digest animal substances, and vegetable substances which are easily dissolved, but cannot digest the grosser vegetable productions, such as uncooked herbs, grasses, and straw. On the other hand, these latter substances are digested by herbivorous animals, who have, for the most part, a more complicated digestive apparatus.

But although the gastric juice be, in virtue of its chemical composition, the solvent of both simple and compound aliments, and its action on these substances is chemical, digestion is nevertheless a vital operation—one that which has for its object the growth and life of the animal, while the stomach secretes the solvent, the gastric juice, by means of the vital power with which it is endued. In order that this secretion shall take place, it is necessary that the stomach should be in a healthy state, and possess those certain particular conditions of form, and of organic composition, which alone will permit the full exercise of its functions. It is also necessary that it shall possess the faculty of being affected or excited by the aliment which it receives into its interior, so that it shall have power, in consequence of this stimulation, to extract from the blood which is alkaline an acid and solvent gastric juice. Finally, it is necessary that this organ should have the power, by its own proper muscular movement, to pass the aliment which has been dissolved and digested—the chyme—through the pylorus

into the intestinal canal, to the end that the portions which are not yet dissolved shall be more fully exposed to the action of the gastric juice.

The functions of the stomach, relative as well to nutrition, secretion, and its sensibility to and susceptibility of irritation, and also to the movements or phenomena of irritability, appertain to it only so long as it is in connexion with and has relation to the rest of the living organism; it therefore depends on the circulation of the blood, and the influence of the nervous system.

The arterial blood is the fluid by which the stomach is nourished, and at the expense of which the gastric juice is formed: every circumstance therefore which has influence on the formation or production of blood, or the conversion of arterial into venous blood, ought to be considered, as well as those which bear immediately on the function of digestion. Deficiency of nourishment, a great loss of blood, or an augmentation of the secretion of various fluids, weaken the digestion, because they diminish the nutrition of the stomach and its secretory power, and also diminish the power of its muscular parietes, and restrain the vital influence which the nervous system exercises upon it. Every thing which disturbs the respiration, whether it be by rendering difficult, or suspending the respiratory movements, or introducing impure or vitiated air, or impeding the circulation of the blood through the lungs, or, finally, injuring the normal structure of the lungs, all enfeeble the digestion, because the blood no longer possesses the property of fully maintaining the nutrition and vitality of the stomach, or furnishing it with the materials for the supply of gastric juice, abundant in quantity and efficacious. The heart and the arteries exercise an essential influence on digestion, by conducting to the parietes of the stomach the blood which is necessary for its nutrition, and the secretion of the gastric juice, and the manifestation of the phenomena of irritability and sensibility.

Finally, as to the influence of the nervous system on the digestive function, there cannot be a moment's doubt of it, although it may be difficult to explain the precise connexion between them. The stomach receives numerous and large nervous branches, as well from the par vagum as from the great sympathetic. The first form large plexuses on the œsophagus, and send a multitude of branches to the muscular and vascular tunics of this organ: the others surround, with the most complicated and delicate network, the arteries which supply the stomach, and distribute themselves over all the tunics of that viscus.

The united experiments of the best physiologists lead to the following conclusions:—

1. The simple section of the eighth pair of nerves, without excision of any part, or change of the direction of the nerve above or below the section, will not destroy the digestive power, but only retard it.

2. The section of a nerve, with loss of substance, still more considerably diminishes the digestive power, but does not quite arrest it.

3. The section or destruction of a portion of the spinal marrow, or the excision of a part of the brain, produces the same effect.

4. Narcotics given in sufficient quantities to affect the system, impair digestion in a proportionate degree.

5. When digestion is almost entirely suspended after the section or the excision of a part of the pneumo-gastric nerve, it may be established by means of electricity or galvanism applied to the stomach. The re-establishment of digestion by the aid of the electric influence is not confined to the chemical action of the stomach on the aliment, but the natural motion of the muscular parietes of the stomach is re-established.

6. The principal office of the par vagum in the function of digestion consists in exciting the peristaltic motions of the stomach, and bringing the gastric juice into more complete contact with the aliment.

7. The suspension of digestion after the section of the pneumogastric nerves consists in paralysis of the muscular tunic of the stomach.

Although the motion of the stomach appears principally to depend on the influence of the par vagum, and the irritants, mechanical and chemical, which act upon this nerve determine also contraction of the muscular membrane, it nevertheless would seem probable that the secretion of the gastric juice, and its acid character, are, at least partly, dependent on the pneumo-gastric nerves, and that the impairment of digestion which succeeds to the section of these nerves proceeds from the want of the acid gastric juice. The opinion that the secretion of the gastric juice is under the influence of the nervous system appears to derive some support from the phenomena observable in the sheep that died a few hours after the removal of the pancreatic juice. Although the animal had eaten a considerable quantity of oats before the operation, the liquid and the grain which the abomasum contained were not acid but alkaline, and strongly effervesced with acids. Here the nervous action appeared to have been so enfeebled by the painful operation that had been performed, that the secretion of the acid gastric juice was no longer effected.

It is possible that the ramifications of the great sympathetic, which penetrate with the arteries into the walls of the stomach,



have the greatest influence in the secretion of an acid gastric juice after the ingestion of the food. It is exceedingly difficult, or perhaps impossible, to divide, in a living animal, all the nerves which accompany the arteries of the stomach, and to ascertain the varying influence, at each section, on the nature of the gastric juice.

## ON DRENCHING.

*By Mr. JAMES HORSBURGH, V.S., Dalkeith.*

[We had considerable doubt of the policy of re-opening a question that had been fully, and a little too acrimoniously, discussed: but Mr. Horsburgh states his case candidly, and he gives an interesting account of his own experience.—Y.]

I HAVE until now been a silent spectator of the dispute respecting the propriety of administering medicine in a liquid form, although I must acknowledge that I was not a little surprised to find some, high, and deservedly high, in the profession, affirming so decidedly that there is no danger in a custom which has, again and again, in my experience, been attended with unpleasant and fatal results. I have had the opportunity of often seeing bronchitis following the administration of a drench, and I regret to say that it has happened in my own practice.

It is sometimes difficult to give even a ball; how, then, is it possible to force two or three pints of fluid, and that of a nauseous description, without resistance, and considerable force being required? The thing is an impossibility, even with all the cunning, coaxing, and soothing of the most accomplished drencher. He must put the animal in an unnatural position. He pours a fluid into his mouth, nauseous to his taste, and, in four cases out of five, he will and he does resist, and force must be employed.

I have no hesitation in saying that I can give a drench as well as any of my neighbours, but I have never been in the habit of giving them when I could possibly avoid it. Drenches are oftener given in flatulent and spasmodic colic than in any other disease, and if they could be safely conveyed into the stomach, perhaps they would act more quickly than when given in a solid form; but when we are likely to produce a disease more dangerous than the one we are endeavouring to cure, we are certainly justified in trying other means. A ball newly made will, in a few minutes, dissolve in the stomach of a horse, and colic is not a disease so very suddenly fatal that five or ten minutes is of such consequence.

I never gave the turpentine mixture so commonly administered in colic, for I have too often seen sad consequences resulting from its use in the practice of others; but my medicine was exhibited in the form of ball, and consisted of extract of hyoscyamus, gum opii, carbonate of ammonia, ginger, &c.; and I have had in this all that the most strenuous advocate of the drench could desire, and without the danger that always accompanies that drench. When I do give medicine in a liquid form in cases of colic, my drench consists of the extract of hyoscyamus, or opium, or both, in aqueous solution, with spirit of nitrous ether, avoiding ginger, or any other stimulating ingredient. I have also found much advantage from fomentation with blankets taken out of boiling water, applied to the belly, and confined there by means of sacking, or other contrivances. Venesection and enemata are often indicated.

I beg to add a few cases out of many that have come under my observation of the danger of drenches:—

CASE I.—A grey horse belonging to Mr. J. Croale, of Edinburgh, was taken ill at his farm, with catarrh. He was bled, blistered, &c., but his mouth and throat were in such a state of engorgement that it was impossible to introduce a ball. I had recourse to the croton oil, thirty drops of which I endeavoured to give in a pint of thin gruel, and which was effected with much difficulty. He ultimately got well, and, as soon as he was capable of travelling, was sent to Edinburgh. Some pretenders to horse knowledge there examined him, and told his owner that I had entirely mistaken the case, for, if I had ever looked into the horse's mouth, I should have seen what was wrong. Mr. C. was very angry. He paid my bill with considerable reluctance, and, although some time has now passed, I occasionally think that he has not all the confidence in me which he used to have. It is needless to add, that from the swollen state of the fauces, and the difficulty of swallowing, the medicine had been detained a considerable time in the mouth, and had blistered the tongue and lips, which misled the blockheads referred to.

CASE II.—A horse on the Edinburgh and Dalkeith Railway had, for some time, been passing a great number of worms. He was in bad condition. I gave him from a bottle four ounces of the oil of turpentine in a pint of linseed oil. Although I administered the drench myself, and the horse took it without a struggle, he immediately coughed. Laborious breathing presently succeeded, and, in two days, he died of inflammation of the lungs. With the exception of the worms, he was perfectly free from disease when he got the drink.

CASE III.—I was requested to attend a cow belonging to Mr. Neil, of Crookston Mill. She had puerperal fever, and, after about a week's treatment, got pretty well. When I called a few days

afterwards, I thought we might make the case more secure by giving another dose of medicine. I dissolved a pound of sulphate of magnesia in water, and gave it out of a bottle. She coughed, heaved violently at the flanks, and was much distressed; but, thinking that this would pass off, I left her. I called again the next time that I passed that way, and was told that she died in about half an hour after I was gone.

CASE IV.—In December last, I was called upon to attend a valuable cart-horse belonging to Mr. Heldier, of Carrington Barns. He had colic, and for which they had given a solution of common salt and nitre. I found him in the most pitiable condition—the perspiration streaming from every pore. I could distinctly hear the fluid gurgling in the bronchial tubes. The pulse was 90. I commenced the most active treatment as for pneumonia, but in twenty-four hours Mr. Heldier's best horse fell a victim to that abominable drench.

The post-mortem examination shewed the most intense inflammation through the whole substance of the lungs. They were as red as scarlet, probably from the effect of the nitre: the air-tubes were filled with bloody frothy mucus, and which ran from the nose as the horse lay on the ground.

I could multiply these cases to a fearful extent. One, in particular, occurs to my recollection in my own immediate neighbourhood. The horse had been treated for inflammation of the bowels. Physic had been given, and drenches of gruel every two hours, in order to promote its operation. The horse was dead before I saw him. I was requested to examine him. The disease of the bowels had been completely removed, but there was extensive inflammation of the air passages of the lungs, produced by this excessive drenching. None of the cases which I have now related are much more than a twelvemonth old.

Cows seem to die sooner from the effect of drinks than does the horse. I have heard of several that have dropped, and almost instantly died.

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## A CASE OF LACERATION OF THE TONGUE.

*By Mr. HORSBURGH.*

A HORSE belonging to A. Grey, Esq., refused his food. His lips were very much swelled, and his tongue considerably protruded from the mouth. On examining the mouth, I discovered that the tongue was cut nearly through. It was hanging by a portion of the under surface not more than half an inch wide, and seemed as if it were ready to fall from the mouth. I had the horse properly



secured, and placed a balling-iron in his mouth. I then cleansed the wound, and applied a little liquid blister to each of the divided surfaces. I next inserted two stitches deep into the substance of the tongue near the centre, and another on each side, and so brought the two surfaces of the wound into complete apposition. The diet of the animal was restricted to sago gruel. So rapid was the reunion of the parts, that in ten days the animal was able to resume his work. He has the complete use of the tongue, and the mark alone shews the nature and extent of the injury.

This severe laceration was produced by the rope being put through the mouth by the carter, and, then, the horse beaten, and the rope forcibly pulled.

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A case very much resembling this has been recorded by a quondam rival, whose virulence we have long since forgiven, but whose zeal in our common cause we shall never forget or undervalue. It is related by Mr. John Fry :—

“A circumstance somewhat similar”—the tearing out of the tongue—“happened to a horse of mine some years ago, though how it occurred still remains *to me* a mystery. All I could learn from my man was, that in the morning, when he fed him, he observed he bled a little from the mouth, and, on opening it, he perceived that his tongue was nearly cut off. The man had worked for me several years, and I had no reason to doubt his veracity, or to suspect that he did it either wilfully or accidentally. It was not easily accounted for, as he was a quiet horse; nor could we discover any nail, or any thing else that could have done it, although, from the cleanness of the division, it appeared to have been done by a very sharp keen instrument. Immediately I knew it, I ordered all the food to be removed from him, and his head to be tied up to the rack to prevent his eating the straw, and thereby tearing away the very small piece of membrane that held the parts together, as it was all but divided through, and hung, as it were, by a piece of skin on the under side. I then sent for a surgeon with whom I was in habits of intimacy, and requested his advice, which he readily gave, as well as his operative assistance. We threw the horse, and with proper help secured him so as to prevent his struggling, and, with a curved needle and thread, he sewed the parts together. To nature was left the performance of the cure, which was completely effected.

He was fed entirely on soft meat, bran mashies with ground oats, and a little treacle or honey, on which he fed, without any apparent difficulty or pain, for about a fortnight. He was occasionally exercised in his halter, without putting his bit into his mouth. My friend regularly examined his tongue, and, pronouncing it going on

well, by degrees we added chaff to his mashes. At the end of three weeks he was put to gentle work, always avoiding touching his tongue, and, at a month's end, he was perfectly cured, and ate hay as well as ever. It formed a complete junction, and preserved its natural faculties, though, on inspection, it was very visible, as there was a considerable chasm, nearly as deep as would contain a goose-quill."

The Editor adds to this, that many instances have occurred to him in which the apex of the tongue has been nearly severed, and, in some cases, to so great an extent as to render the giving of a ball very difficult, without considerable risk of its apex being pulled off\*.—Y.

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## ON THE FORMATION OF A VETERINARY BENEVOLENT INSTITUTION.

*By Mr. W. J. T. MORTON, Royal Veterinary College.*

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"Sorrow breaks seasons and reposing hours,  
Makes the night morning, and the noontide night."

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FULL oft has the plaintive tale been told, and the earnest inquiry made,—“Is there no fund whence relief to the distressed veterinary practitioner can be afforded?” The answer, of necessity, has been in the negative, and the chilling word has awakened the questions, “Why is it so? Cannot some plan be adopted by which ‘soft melting Charity’ may exercise her heavenly office, without arousing those painful feelings which mar a noble act, and make man feel inferior to his fellow-man?”

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“The tear that is wiped with a little address,  
May be followed, perhaps, with a smile.”

The strong are commanded to help the weak, and we are told to do good unto all men. Now it has been my misfortune, situated as I am, to see and hear much of the distress which arises either from the want of circumspection in conduct at the onset of life, or from those visitations of Providence to which it becomes us to submit, however dark and mysterious they may appear.

\* The Hippiatrist, vol. iii, p. 98. For instances of laceration of the tongue see THE VETERINARIAN, vol. v, p. 22, and ix, p. 39.

Geoffrey St. Hilaire, in the “Histoire des Anomalies,” vol. i, gives a curious account of a calf with a double tongue, one by the side of the other, or, according to Meckel, a bifurcation of the tongue. In cases of true double tongue, according to these collectors of monstrosities, one must be above the other.

It is true that the veterinary profession has not arrived at maturity, but happily it counts among its numbers many possessed of much of this world's goods, and who have hearts to feel for another's woe. The hands of such would, I have no doubt, be liberally stretched forth, were there a channel rightly appointed to convey the boon. I have, therefore, thought that a VETERINARY BENEVOLENT SOCIETY might be founded for the relief of those members of the profession who are in distressed circumstances from mental or bodily infirmity, or who, from other causes, shall be considered as requiring and deserving assistance, and this relief may even extend to their families after their decease.

I have thrown out the hint. Propositions are easily made; but before a subject can be brought to bear, many circumstances are to be taken into account, and various matters cautiously weighed. I would merely suggest that the Society should consist of the usual officers, all honorary, viz., a president, twelve vice-presidents, who shall be directors, a treasurer, and a secretary. That the members shall pay a subscription of one guinea annually, and, after they have paid ten guineas, shall be eligible to receive relief; which, if they never should want, it will be the better for those whose pathway through life has been less favoured, and on whom the rod of affliction has rested. All the members of a profession can hardly anticipate uninterrupted prosperity. Uncontrollable events will arise; and although I am decidedly of opinion that the greater number of what are designated misfortunes are those of our own seeking, yet I do know that the most careful and the most prudent have been sometimes brought low; and those whose morning of life was the brightness of sunshine have had the evening close in with darkness and clouds. The friends of their prosperity have forsaken them, and, in a state of almost abject poverty, they have alone contended with the storm, too proud to beg, and too honest to steal. It is for such the Society of which I have spoken would be formed; and, surely, there are those who will lend a helping hand.

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## MILK FEVER, OR ABDOMINAL NEURALGIA (RARELY PRIMARY, OR CONCURRENT PERITONITIS.)

*By Mr. ROBERT READ, V.S., Crediton.*

DURING thirteen years' extensive practice in a good and rich landed district, I have seen many cases of puerperal fever. I have, however, been more fortunate of late years in the treatment of it, than on the onset of my career; as I then could not divest



myself of the impression that the symptoms evinced were of a highly inflammatory character, and the disease was treated, agreeably to that idea, with the too often over-and-over-again plan of bleeding and purgation—a path I trod for many years with very indifferent success. I have bled largely, and in small quantities, from the neck and the subcutaneous veins of the belly: but in seven cases out of ten, the pain has increased, and the other symptoms have been aggravated, and, in many acute attacks, death has taken place in from twelve to twenty hours.

Now I consider, as Mr. Friend does, the disease to be, in most cases, of a highly nervous type; but whether the spinal marrow is primarily or secondarily affected, I cannot decide. The abdominal pain may first take place, and the spine become disordered by sympathy. In acute cases, which happen mostly to cows in good condition, whether they calve in or out, nothing is at first perceived. The cow eats—drinks—is driven from the farm-yard to the field—and gives her full portion of milk—when, all of a sudden, in runs the milkmaid to inform her master that the cow is bad, is stamping violently, and that, in trying to turn her out, she reeled behind, and nearly fell. The veterinary surgeon is sent for, and, if he lives a mile or two off, before his arrival the cow has dropped, and all the acute symptoms of milk fever are presented to him.

I do as yet maintain that acute milk fever has, like most nervous disorders, scarcely any premonitory symptoms. Mr. Friend seems to think it a chronic disease of the spinal cord; but, if so, would there not be a loss of condition, various disordered functions, incomplete paralysis of long continuance, spasmodic twitchings, &c.?

In chronic milk fever I agree with Mr. Friend, that, whether it is a sequel of the acute, or primary in its origin, there is a distempered state of the spinal cord on examination after death. Peritonitis has deceived most of us, although sanguine, prior to the opening of the body, that we should find it.

January 3, 1839, I was sent for in haste, to attend a cow (crossed with the North Devon) belonging to Mr. Harris, of Ruxford Barton. She was in good order, had calved well two days before, given her full portion of milk, and eaten and drunk well. She had been allowed to walk out in the yard adjoining the cow-house, when, all of a sudden, she appeared to be uneasy; she was stamping violently, yet some of her movements were similar to a species of paralysis. An hour afterwards the rambling gait came on. Two hours had elapsed before my arrival, and, just as I entered, she dropped with every symptom of acute milk fever.

I immediately sent for a sufficient quantity of mustard; mixed equal parts of turpentine and oil, and, with some meal, made a large cataplasm, which I spread and rubbed extensively over the

spine, from behind the pins, to within a foot of the shoulders, and in width a foot on either side of the spine. I also gave one pound of sulphate of magnesia, in six quarts of water, with three ounces of tincture of opium. I clystered her, and had her turned three times a-day. I often horned her with gruel, and repeated the opium every four hours for three times.

*2d Day.*—She was still down, her head on her side, and moaning sadly. There was no dung, except what came away with the clyster. Repeat the opium and give nitrous ether, twice during the day. The mustard cataplasm has produced a serous infiltration, and the back is swollen. Laxative dose repeated.

*3d Day.*—She drank a mixture consisting of equal parts of cold gruel and water. There is a slight desire to eat. She would feebly masticate a bit of sweet hay in preference to cabbage or turnip tops. The bowels not purged. The clysters barely coloured.

*4th Day.*—Better. She stood up with difficulty. The appetite improving. She ruminated a little, and drank freely of water and gruel.

*5th Day.*—Still getting better. Rumination more frequent. Purgation freely coming on.

Now, I do not hold for the continued exhibition of purgatives. No effect will be produced until the rumen is roused to action, and then, if we have been too free with our cathartics, we shall sometimes have violent purging. Our chief object should be to stimulate the rumen; for, as soon as the cow chews her cud, purging will quickly ensue. She recovered in about fourteen days; but, although more than half fat when first attacked, she was sadly reduced in that time.

## CASE II.

A cow, in condition, and fit for the butcher, belonging to Mr. Norrish, of Sandford Barton, was, on the 23d May 1839, thirty-six hours after calving, and having twin-calves, taken with acute milk fever. Immediately on my arrival, I applied the mustard cataplasm, &c., and clystered, and gave, for the first time, a pint and a half of linseed oil, with 40 drops of creasote. I repeated the creasote with 2 oz. of spt. ether. nit. on the same day, and continued until one and a half drachm was given.

*2d Day.*—She drank a little water and gruel. The eyes were wild; the pupils dilated; the nose glaired with moisture; she dragged herself round the cow-house; occasional moaning; the head not so often to her side: the clysters brought off black dung and mucus. She drinks more freely, and chews a little hay.

*3d Day.*—She makes efforts to raise herself, and, in the course of the day, rose and stood a little while; appetite improving; ob-

served to ruminate in the evening. I gave, to-day, 4 oz., in the whole, of anise, caraway, and ginger, mixed with beer, gruel, and treacle.

*4th Day.*—Voids small patches of dung; ruminates; eats and drinks tolerably; stands for a longer time. The carminative dose repeated.

*5th Day.*—Still improving. I ordered her to have beer, gruel, and treacle.

*6th Day.*—A messenger arriving to tell me that she was getting on well, I did not visit her again.

In this case the urgent symptoms were soon relieved. Whether the creasote had any thing to do with it I cannot affirm; but the cataplasm produced, in twelve hours, a profuse serous cellular infiltration. Thus much, however, I will say, that our sheet-anchor in the cure of this malady will be extensive spinal counter-irritation, sedatives, rousing the rumen, and clearing the lower bowels by clystering and mild purgation, in order to remove what remains in the canal above. We may give dose after dose, but we shall not purge our patient until rumination begins, and then the bowels will act almost of themselves, and generally in proportion to the rumination. Most of us are aware that it is easy to purge while rumination is going on; and all of us, in cattle practice, are often annoyed in giving purgatives, dose after dose, without effect. They have entered the paunch, and there they remain: but stimulate and excite the rumen to act, and purging soon commences, and sometimes violently.

About two years ago, I had a case of milk fever that, on the fourth day after the attack, left the hind parts, and, by means of the spinal cord, the brain became implicated, producing an incapability of raising her fore parts; spasmodic retraction of the neck to the side; the eyes drawn into the orbit; amaurosis; excessive irritability; and stupor. Should I meet with a case of this sort again, I shall bleed from the root of the horns. She died shortly after the attack.

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## ON THE USE OF CANTHARIDES IN GLANDERS.

*By Mr. J. B. MINIKEN, Wexford.*

*To the Editor of "The Veterinarian."*

Sir,—ALLOW me, through the medium of your Journal, to offer a few remarks relative to glanders, in which disease I have found large doses of cantharides most successful; and although it may be a subject uninteresting to many of the profession, yet some de-



gree of information may be transmitted to others. I will take one case, which will prove as an example of the treatment pursued with regard to other patients afflicted with that dreadful scourge.

On February 11th, 1838, I was called to see three horses, the property of Mr. White, postmaster in Wexford. They had been under treatment for some time previous to my being consulted. After a minute examination, I pronounced them to be glandered; and, at my recommendation, and agreeably to the wishes of the owner, we destroyed two of them: the third was given up for experiment.

*Symptoms.*—He had a discharge of a thin gluey matter from the near nostril, of a most disagreeable odour; an enlargement of the near submaxillary gland, and closely adhering to the bones; a considerable number of small foul ulcers appearing on the pituitary membrane; and at every inspiration and expiration a roaring sound was emitted, which proved that great obstruction existed in the nasal passages. The animal had evidently lost much condition; the coat was staring, and there was great prostration of strength.

The treatment I adopted consisted of that excellent operation particularly recommended by Professor Sewell,—trephining. I bored into the nasal and frontal cavities, into which I injected, with a large syringe, a very weak solution of sulphate of zinc twice every day; but, frequently in the day, pure water was used, from which the most beneficial results were produced, washing out large particles of mucus mixed with blood. I also introduced a seton under the jaw in close approximation with the enlargement, and which was dressed with turpentine and oil.

Not succeeding fully to my wishes, I next administered a ball, containing cantharides ℥ii, gentian ʒj. The nose was steamed twice a-day. I ordered the forage to be given in small quantities, and of the most nutritious nature. He got weak lime-water to drink, which, after a few days, he took greedily.

I continued this treatment up to the 25th, when I perceived the discharge gradually diminishing, the enlargement much reduced, the ulcers disappearing, and the horse gaining his strength rapidly.

I had increased the cantharides to ʒj, which I still continued up to the 9th of March. I then discontinued giving any more medicine; and, on the 29th of March, I discharged him a perfect cure, in beautiful condition. I have had frequent opportunities of seeing the horse since, and he has been at work every day up to this time.

I have frequently had cases similar to this, and which I have treated in the same way. In some cases I have increased the cantharides to ʒij. I never perceived any bad consequences resulting from these large doses.

If this is worth while inserting, I will frequently send you a case for publication, as I have derived a great deal of useful knowledge from the perusal of THE VETERINARIAN.

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## VENTRAL HERNIA—CREASOTE IN OPHTHALMIA— CASTRATION WITH THE CAUSTIC CLAMS.

*By I. W. IONS, Esq., V.S. Waterford.*

IN April 1839, a bay filly was brought to my establishment, having received an injury two months previously, from the horn of a cow, between the cartilages of the false ribs inclining to the flank. The opening was about six inches in length. No inflammation ensued, and I was disposed to try what pressure would do in this case.

I commenced by returning the intestine into the abdomen, and putting a pair of clams, such as I use in castration, over the skin and pouch, ordering the injured part to be bathed several times in the day with a solution of nitre, in the proportion of half an ounce to a pint of water. In a fortnight the whole sloughed away, leaving only a thick white cicatrix the length of the clam. A solution of sulphate of copper had been applied instead of the nitre during the latter part of the time. The filly is now at grass, perfectly sound.

I had commenced some experiments with creasote in cases of "specific ophthalmia." This disease has been very prevalent during the last two months. In two instances I had recourse to the creasote, and with complete success. I will send you the particulars of them, and I trust of some others, in my next communication.

In every operation of castration I use the clams, with a caustic composed of one part of sulphate of copper, one of alum, and one of pipe-clay, and, on an average, operate on 100 colts annually. There is very little swelling, and they are never off their feed. They are fit to take their exercise in three days after the operation. I never, by any chance, lose a patient, although I operate indiscriminately in winter and in summer. I lately operated on ten horses belonging to the Marquis of Waterford, and among whom was "Bamfylde," a seven years' old horse. They were not an hour sick, and were at their exercise on the second day.

About two years ago, a horse belonging to Captain Jason Hasard was sent to be castrated. He was a powerful, well-bred horse, nine years old, and had covered three seasons. He was sent home in a week, perfectly healed—a circumstance I believe unparalleled.

I have great pleasure in informing you of the perfect recovery of my son. Since I last wrote to you, a small ulcer had formed over his right eyebrow. It was dressed with the creasote. Healthy granulations were speedily formed, and all is well.

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## CONSULTATIONS.

## No. VII.

## CHRONIC AND FÆTID DISCHARGE FROM THE NOSTRIL.

My dear Sir,—I BEG your advice on the following case. A valuable cart-horse was affected with catarrh in the month of July last, from which he recovered by the usual treatment. There still, however, continued a discharge from the right nostril, and I was desired again to visit him on the 8th of January last. I found him very much reduced in condition, and a discharge from the nostril of a white, purulent, and very fœtid matter. There was no swelling under the jaw, and no discharge from the left nostril. The horse has fed moderately from the commencement of the disease. I had some suspicion of glanders.

I injected the nostril, first with warm soap and water, and then with a solution of sulphate of zinc. I also inserted a rowel under the jaw, and gave a drachm of sulphate of copper daily in a mash. Ten days afterwards I removed the rowel: there is no glandular enlargement between the branches of the jaw, any more than the rowel would naturally produce; but the discharge from the nostril still continues, and smells as abominably as before. There is the slightest possible adhesiveness about the discharged matter. There is not the least appearance of ulceration within the nostril, nor are there any farcy enlargements in any part of the animal.

As my treatment of the case seems to be attended with so little good effect, I should feel extremely obliged if you would favour me with your advice. I had a case of tetanus in a quey, two months ago, brought on by cutting off some angleberries. I endeavoured for several days, but without effect, to purge her with Epsom salts and other purgatives. At length I gave her a good dose of croton oil, which had the desired effect. She was then well horned every day with a decoction of linseed containing opium in it. It was given to her from a bottle. This was continued for a fortnight, when she recovered, and is doing well. This is the only case of tetanus I have had in cattle.

I am, &c.



## REPLY.

This is a case of disease, either of the molar teeth or of the membrane lining some of the sinuses of the nose, attended by a thickening and partial closing of the nostril, with irregular discharge of foetid matter. If, on examination, the disease is referrible to the teeth, the decayed one must be extracted; if the nose, the sinus must be opened and injected, first with warm water, and afterwards with some gentle astringent wash, as the lime lotion.

W. DICK.

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No. VIII

## INFLAMMATION OF THE WOMB IN EWES AFTER LAMBING.

Dear Sir,—As a reader of your work on Sheep, and a constant subscriber to your periodical, I have taken the liberty of addressing this note to you, on a subject of great importance to flock-masters and to the public.

The disease that I am about to solicit your opinion upon is *heaving*, and inflammation of the womb, after having given birth to their lambs.

I find, in your work on Sheep, that you recommend bleeding and Epsom salts; to both of which I have given a fair trial, and I am sorry to say that we have not been successful in a single case. We are losing, at this time, twenty per cent. The attack commences from six to thirty hours after parturition; and, including those who have experienced a difficult labour, and others who have given birth to their lambs without any assistance.

The symptoms when first noticed are, continually shifting their posture—lying down and getting up again immediately—the ears hanging down—the eyes looking dull. Sometimes partial or almost universal palsy ensues, and mortification of the womb terminates the poor animal's sufferings.

I have tried bleeding a few days previous to their lambing, and immediately after parturition, but neither did any good. The sheep are not in high or low condition; some of them have been living on Swedes and some on white turnips, and they have never had an over quantity. The turnips are very good for the season, without much green top. They have also, at times, had salted hay.

When we first began to lose them, we attributed it to the north-east wind and the quantity of snow that fell at the time; but we were wrong in this, for we are losing them now that the wind is south-west.

I am, &c.

## REPLY.

My dear Sir,—I was from home the greater part of yesterday, or I would have immediately replied to your letter. I much fear that this dreadful disease is assuming an epidemic character in your flock, and will pursue its course in despite of all that you can do. How is it with your neighbours? Has your flock been at former times subject to this dreadful malady?

I scarcely know what measures to advise you to pursue. You must have recourse to antiphlogistic and decisive treatment: but there is often great difficulty in apportioning this to the state of the sheep. In diseases that imperiously demand it, you scarcely know what to do; for, with their lymphatic temperament, the very slightest excess in depletion will be as destructive as inflammation left to pursue its usual, and, too often, fatal course.

The grand thing is to get them and to keep them in good health when the time of lambing approaches. I do not mean that they should be in high condition, but as *healthy* as they can be with a moderate quantity of fat about them. Perhaps a little portion of dry meat should be allowed. Health, without any unnatural irritability, would be the grand object sought after. How many things, with regard to shelter and to food, would this include?

After parturition, however, should inflammation of the womb threaten, I would not neglect either to bleed or to purge; but in both I should be cautious.

W. Y.

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No. IX.

## MONKEYS—DILATATION OF THE HEART.

Sir,—As the season has proved very fatal to the animals at our Zoological Gardens, more particularly to the monkey tribe, of which we have recently lost between twenty and thirty, by an epidemic attacking the lungs, chest, and spleen, and which is very rapid in its termination, we are very anxious to hear from you whether you have been lately, or at any period, subject to similar visitations; and what has been your plan of treatment both as to diet and medicine, and whether you think the effluvia of the carnivora likely to produce such an effect.

We had hitherto, during the three seasons that we have been established, lost a very small number of animals, and much below the usual average; but we have now the mortality of several seasons in one, and our beast-house is almost depopulated.

I should thank you to give me the usual dietary of your monkeys, and to say whether you vary it much.

I am, &c.

#### REPLY.

A letter from you, addressed to the Secretary of the Zoological Society of London, has been put into my hands, referring to a mortality which has lately prevailed among your monkeys.

A disease of a somewhat similar character appeared among our quadrumana in the months of February and March, and we lost not fewer than nine monkeys and two lemurs. There was disease of the lungs in all of them, but not the usual post-mortem appearances of consumption. There was a certain degree of inflammation, but few of the tubercles that used to be almost invariably found.

On the other hand, there was a lesion that had been previously rare among us, but was absent in scarcely one of these cases—dilatation and thinning of one or both of the ventricles of the heart.

The symptoms, during life, were cuddling into the corner of the cage—loss of appetite—sick-monkey countenance, but far more deplorable than in most other diseases—the flanks quiet, and little or no cough. These circumstances told us that phthisis had little or nothing to do with the affair.

As the disease proceeded, the animal shrunk himself up, and shivered and looked as though he were palsied. He rapidly wasted away, and died a perfect skeleton.

Our most successful treatment was to move the patient into the warmest part of the room—to open his bowels with castor oil and syrup of buckthorn, to which a little syrup of white poppies was added, and to give him syrup of ginger, and some spirit of nitrous ether in his sop. Those that recovered had been thus treated. I believe, however, that the most efficacious things that were adopted were warmth and comfort.

Our standard food consists of bread and milk, with a little sugar, in the morning; and we afterwards give, varying them occasionally, nuts, almonds, potatoes, onions, and carrots. The food had little or nothing to do with the disease, nor had the effluvia of the carnivora.

I should be very happy to communicate at any time with you; and, if any advice of mine is worth your having, it will be always at your service.

W. Y.

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## HUSK—PHTHISIS—DISEASED LUNGS IN A COW.

By Mr. W. A. CARTWRIGHT, *Whitchurch.*

I WAS sent for on June 12, 1839, to a tan-yard, to examine a dead cow belonging to Mr. Sparkes, of Blacoe, that had been ill for some months of the husk. I did not attend during her illness, nor do I know any particulars of her illness or its symptoms.

*Trachea.*—On laying open the trachea from the larynx, I found that it was much diseased in half a dozen places, or more. Just about (at the posterior part) where the cartilages overlap each other, it had, at intervals of about an inch, a dark blue appearance, thickened and more prominent; and, on cutting into these places, pus issued thereout, leaving the cavities of a dark hue. Close around these abscesses, and for some distance, there was effusion of venous blood, one-eighth of an inch in thickness; indeed, it would almost seem as if the abscesses had been formed in the centre of effused venous blood. In four or six places on the sides of the trachea, there were small ulcers, just through the mucous membrane. In several other places, immediately above the bifurcation of the trachea, there were several ulcers larger than a shilling, and their outer edges were raised and rough, and of a pinkish colour. Within the circumference of the ulcers there was a concrete gritty substance, of a yellowish colour, and of various thickness. These ulcers extended to the cartilages, but had not entered into them; yet, on breaking some of them, they were evidently more brittle than at any other part.

There were none in the larynx. Throughout nearly the whole of the bronchial tubes one-half of their mucous surfaces were ulcerated, and within the ulcers there was the same concrete gritty matter as in those of the trachea. On the other more healthy portions there was a great secretion of thick mucus, almost filling and obstructing their tubes, and some of it was found among the matter in the various abscesses, or where these tubes opened. In a few places on the mucous surface of these bronchial tubes I found small tubercles, with the same concrete gritty matter in them.

*Lungs.*—On an external view of the lungs they were considerably larger than natural; in some places of a healthy pink colour, and in others of a yellow-white. The outer surface had an irregular appearance and feeling. In some places it was hard, and in others sound and elastic.

The vast number of small tubercles that could be felt and seen on the surface and in the substance of the lungs, were nothing more than

diseased terminations of the bronchial tubes, or air-cells. They—the air-cells—appeared to be thickened and coated with the same concrete, yellow, gritty substance as found in and around the ulcers in the trachea and bronchial tubes.

In many of the larger hard tubercles their centres were in a softening state, and enclosed in a cyst or capsule, as the matter could be clearly turned out, leaving only a thin covering. In several places, towards the surface of the lungs, the tubes were entirely disorganized, thickened, and only containing concrete matter. Some parts were one dense mass of similar matter, and only shewed the smaller lobes by cutting them across. In one large portion of the lungs I found that, at the extreme end of the bronchial tubes, they opened into large abscesses of muco-purulent matter; indeed the matter was almost similar to the mucus. These abscesses, at the edges and surface of the lungs, would seem as if they occupied the whole smaller divisions, or lobuli, as they could be clearly dissected out from the surrounding intervening cellular tissue. They had, externally, a yellow white appearance, and there were similar ones more deeply seated in the neighbourhood.

As a contrast to this, there were, at other places, large portions of the lung that were in a truly hepatized state, and the pleura covering them was very vascular. On cutting into them, they had a beautifully variegated appearance, being, in some places, of a pinkish hue, in others of a yellow-white colour, and, in others, of a streaked white. The pinkish hue was the condensed parenchymatous tissue, and forming the boundary; the yellow-white parts were nothing more than diseased bronchial tubes, as in the centres were distinct openings of various calibre. These bronchial tubes were very much altered in texture, thickened in their coats, and lined within with a similar concretion to that deposited in most other parts, and with scarcely any mucus. The white streaks were the connecting cellular membrane.

In one-half of the lungs, at different parts, there was the last-mentioned peculiar deposit of yellowish solid matter, and no traces of the bronchial tubes to be found; with merely a few bands of condensed cellular tissue on the boundaries of the different *small* lobes. Some of these masses were half as large as one's head, and, here and there, in their centre, a softening process had commenced; but, in many, nothing of the sort could be found. In short, it appears to me not at all improbable, that this enormous mass of disease takes its rise in the central and principal bronchial tubes, and gradually extends to the pleura, giving the lungs that hard granular feeling externally. This I proved by tracing a great many of the tubes to their terminations underneath the pleura, and in which place they were thickly set together, and the size of

from large pins' heads to very small peas, and occupying half the surface.

There were similar tubercles and abscesses within the connecting cellular membrane, and which I think were diseased lymphatic vessels passing through, as they had no other connection with the lungs.

*Glands, or Tumours.*—Along the sides of the trachea, and near the aorta, there were nine or ten large tumours (two or three pounds each), which were, to all appearance, enlarged glands. The shape of some was oval, and that of others nearly circular. Two or three of the largest were of an irregular oval. They were, externally, loosely covered with a quantity of cellular membrane, and, ramifying therefrom, were a great many lymphatic vessels, attached in their course to smaller tumours of various sizes, but many of them no larger than peas. The large glands or tumours contained matter resembling that in the lungs; but it was harder, fibrous, and contained a more gritty substance, almost like spiculæ of bone. Throughout their inner texture there were striæ of a sort of cartilage, giving them an appearance, as painters would say, of being marbled. I could not perceive that there was any disease in the pulmonary bloodvessels. This sort of deposit is very common in the glands about the larynx in cattle, and different to what we generally find in the horse.

I cannot terminate this paper without expressing my pleasure on reading the announcement, in your last number, that Mr. Spooner has been attached to the Veterinary College, as Demonstrator and Assistant Professor; and I am sure there is not an individual forming the present class who does not hail it also with delight. As a Demonstrator, he is of a high order, and there is not a pupil who must not improve under his clear, concise, scientific, bold, and manly method of instruction. Well might you observe, "the present class owes him the deepest debt of gratitude" for his unremitting attention to them while they were so unfortunately left without an instructor, and, for so great a length of time, through illness of the other respected Professors.

I also congratulate the profession and the public on the intelligence that the College has, at last, agreed to commence the treatment of our other domesticated animals; for sure I am that no student that ever leaves that College is fit to commence his arduous duties, as a *country* practitioner, without such knowledge, leaving out of the question, as a necessary consequence, the loss he must sustain by not practising in that department.

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## NASAL GLEET — THE TREPHINE — ANEURISM OF THE AORTA.

*By Mr. HARRY DAWS, V.S., London.*

MR. MALLALUE'S bay gelding, four years old, had had a discharge of mucous purulent matter from the right nostril for six weeks, accompanied by an enlargement of the submaxillary glands on the same side. He presented a very suspicious appearance, and was considered by many to be glandered. Had it not been for this complaint he would have been valued at 140 guineas.

His throat and the off-side of his head had been repeatedly blistered, without the least benefit. He was this day, April 1, 1839, subjected to the operation of the trephine. A circular aperture, three-fourths of an inch in diameter, was made into the frontal sinus, between the orbit and the nasal suture; and a weak solution of the sulphate of zinc was injected into the sinus. The injection was daily repeated.

In ten days it became more viscid and paler in colour, and the injection was then suspended. The discharge soon assumed a purulent, and then a muco-purulent, and a mucous, and, finally, a serous character, after which it disappeared altogether. The wound skinned over readily, and the enlarged gland had entirely disappeared on May the 7th.

1839, *April 30.*—I was yesterday called upon to attend a horse more than twenty years old, and exhibiting the following symptoms. Profuse perspiration, literally as wet as if he had been dragged through a pond—a disposition to squat upon his haunches—protruding his head as if choaked—respiration natural—pulse about 40, but intermittent, and accompanied by a peculiar grating or rasping sensation. The submaxillary artery not at all enlarged in character.

I confess that I was not a little puzzled as to the precise nature of the disease; but the more I reflected on it, the more I was convinced that there was some morbid affection, and, probably, altered structure of the heart or large bloodvessels. I removed my patient from the confined situation in which I found him to an open and airy place—allowed him to drink freely of cold water, and gave him an ounce each of tincture of opium and the spirit of nitrous ether. He soon became considerably relieved, and, in the evening, my assistant administered four drachms of Barbadoes aloes in solution.

*July.*—He has not had any return of the violent symptoms described, but his pulse still possesses that peculiar characteristic better felt than described.

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## ON INOCULATION WITH THE MATTER OF TYPHUS, DURING THE PREVALENCE OF EPIDEMIC TYPHOID DISEASES.

*By Professor DELAFOND, Royal Veterinary School, Alfort.*

[Continued from vol. x, page 373.]

[We beg to apologise to our readers for the long delay in the continuation of one of the most valuable papers, in any language, on the Typhoid Epidemic Diseases of Quadrupeds.—Y.]

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A. *The choice of the Virus, or Matter for Inoculation.*—The nasal discharge, the spume that gathers about the lips, the mucopuriform matter from the eye, the tears, and the sero-purulent fluid from the cutaneous pustules, have all been tried.

The Grand Sénéchal, Claus Detlof, and Bulow, insist that the matter shall be obtained from animals affected with typhus of a mild character.

Camper, Munnicks, and Vicq. d'Asyr, do not esteem this a matter of any consequence : but think that the intensity of the disease is regulated by the state of the inoculated animal, or by other accessory circumstances, and never by that of the beast from which the virus was taken. The disease, however, should not be at the state of greatest intensity. Recent matter is preferable to that which has been kept twenty-four hours, and, if it is used before it becomes cold, its effect is more certain.

B. *The Preservation of the Virus.*—Munnicks has found that a thread, saturated with the virus, and enclosed in a sealed bottle, begins, about the fourth day, to acquire a musty smell, and is not proper for inoculation. Enclosed in a bottle hermetically sealed, and kept in a cold place, it retains its virtue during eight days. The air having been pumped out by means of a pneumatic machine, the empoisoned thread will do its duty after eleven or twelve days have elapsed, whether the virus has been taken from the nostrils or any other part.

Detlof has preserved the virus from four to five days in the summer, and fourteen days in the winter. The animal matter from the trenches in which the dead bodies were thrown preserved its contagious property the longest. Vicq. d'Asyr has communicated the disease by means of threads saturated with the putrid sanies that has lain in the trench more than three months. By means of tubes or small plates of glass, the matter is preserved during a period, in most cases, sufficiently long.

C. *The Method of Inoculation.*—Munnicks passes a saturated thread through the eye of a sharp needle, two inches in length; he introduces the needle under the skin at the inside of the thigh, and, giving it a perpendicular direction, in order that the purulent discharge may readily run off, he brings it out at the distance of half an inch from the first insertion—he ties the two extremities of the thread as he would a common seton, and leaves it from twelve to twenty-four hours, a sufficient interval for the contagion to be communicated to the animal, if he is susceptible of it. The same method is adopted in Denmark by Witer-Bergen, and Bulow. Claus Detlof makes an incision of an inch and a half in length into the skin, between the dorsal portion of the spine and the ribs, and in a tranverse direction, and he places in it some threads saturated with the virus, and which he covers and keeps in their place by means of an adhesive plaister.

Girard and Duprey find fault with this method of proceeding. The virus, say they, being deposited in the cellular tissue, may be decomposed there, and may produce those obstinate gangrenous tumours which occasionally arise from the inoculation of putrefying matter. They prefer the lancet or the grooved needle, which is an easier mode of operating, more expeditious, and is rarely followed by the gangrenous tumours alluded to. The instrument is charged with the virus, it is plunged with precaution under the epidermis, and care is taken that, in withdrawing it, the virus is left in the little incision. The poison should be inserted in those parts where the integument is thin and denuded of hair, and the teats or the lips of the vulva in cows, or the muzzle, &c. The effect is not so certain where the skin is hard, thick, and hairy.

*The immediate and consecutive Effects of the Inoculation.*—The inoculated typhus, according to Camper, begins to manifest itself from the fourth to the sixth day, and, during that time, there is no visible change in the health of the animals. On the sixth or seventh day the milk begins to diminish—the conjunctiva becomes red—there is shivering and grinding of the teeth, and loss of appetite. The ears are alternately hot and cold, and the bowels become somewhat constipated. On the eighth or ninth day, the beasts begin to utter the most plaintive lowings—the breathing becomes laborious, and purging commences. About the tenth or eleventh day, the nostrils were obstructed by a sanious humour; and, by the twelfth or thirteenth day, the crisis of the disease had arrived. In some cases the disease was so slight that its symptoms were scarcely distinguishable: in other animals, however, it broke out with violence, rapidly assumed its greatest intensity, and became fatal if it was not attacked in its earliest stage.

From a comparison of numerous cases, it resulted,



1. That inoculation with matter procured from beasts attacked by malignant and fatal typhus, whatever be the period of the epizootic, transmits a disease equally severe and mortal.—(Bergius, Claus Detlof, Vicq. d'Asyr.)

2. That inoculation with the virus procured from beasts in which the disease assumed a mild form, and at every period of the epizootic, transmitted a typhous malady equally mild, and that was rarely mortal.—(Bergius, Claus Detlof, Vicq. d'Asyr, Camper.)

3. Inoculation practised at the commencement and the violence of the epizootic was followed by a fatal result.—(Claus Detlof.)

4. Inoculation practised during the decline of the epizootic, and when the disease was mild, was seldom fatal, and was attended by every desired result.—(Claus Detlof.)

5. Inoculation practised on calves, whose mothers had recovered from an attack of typhus, always did well.—(Camper, Munnicks, Geert-Reinders.)

6. Inoculation with the virus taken from the cutaneous pustules, being practised on eight beasts, succeeded with three alone of them, and the disease was of a mild character.—(Layard, 1757.)

7. The result of inoculation is, on the whole, satisfactory, for more than two-thirds of the inoculated animals have been cured.

*D. Typhus, Natural, or Inoculated, does it render Cattle secure from any future attack?*

*Affirmative Cases and Facts.*—Camper, Munnicks, and Detlof assure us that the beasts inoculated with the matter never, or at least very rarely, are attacked by it again.

De Berg thus expresses himself: "No beast, cured of this malady, ever contracts it again, at least, cases of after-infection are exceedingly rare. The great number of cases that I have had opportunity of observing does not permit me to doubt the truth of this."

"I am convinced with Messrs. Camper and Munnicks," says Vicq. d'Asyr, "that a beast recovering from this epizootic is not capable of contracting it anew; at least, neither of us has seen, either in the South of France or the whole of Flanders, a single instance of the contrary. M. Esmangeard, the Intendant at Bourdeaux, bought, at my request, several beasts that had recovered from the epizootic. We attempted, in various ways, to infect them a second time, but we could not succeed. Of the beasts which escaped in the last year, and they were very few in number, not one was attacked in the present year, although no precautionary means were adopted with regard to them."

In another place, the same author assures us, that he had in vain attempted to communicate the malady a second time to any of the cattle. "This fact," says he "ought to give confidence to the few persons whose cattle recovered from the epidemic: they can scarcely

cite two cases to the contrary, in the whole of the southern provinces, and yet they are suspicious."

Massie, a celebrated physician, and who lived in the very centre of a district that was depopulated by the disease, says, in a memoir addressed to Vicq. d'Asyr, that "experience has taught him that an ox cured of the epizootic disease is of inestimable price, because he can brave with impunity every danger to which he may be afterwards exposed."

In 1770, after the system of inoculation had been established in Germany by Berger and Œder, eleven beasts that had been thus inoculated were sent into Zealand, where the typhoid epizootic still raged. They were dispersed among the herds that were daily thinned by the malady—they were placed in cow-houses in which were animals either dying or dead—they were submitted to every possible trial, without one of them being infected.

Claus Detlof, after having inoculated eight calves, and communicated to them the disease, inoculated them again, no less than three times, but without success. He placed them in stables infectious in the highest degree, but they did not contract the disease.

Bulow inoculated nine cattle. They all of them contracted the disease—five under a severe form, and four lightly. They were all inoculated a second time, but without any result. They were then sent into a locality at that time free from disease; but the malady soon reached and destroyed the greater part of the cattle. These animals alone resisted the contagion by which they were surrounded.

Claus Detlof sent thirty beasts that had recovered from the inoculated disease into a certain district in which no fewer than seventy-three cattle perished in the space of a few days. They were kept in the same cow-houses; they were fed in the same manner as the others, but not one of them became infected.

Camper sums up all these cases by saying, that cattle recovered from the inoculated disease perfectly resisted a second contagion, whether natural or artificial.

In 1815, Messrs. Girard and Dupuy, after having transmitted the prevailing typhus to three cows by means of inoculation, re-inoculated them, and exposed them to infection in every possible way, but neither of them contracted the disease a second time.

These observations and facts are very numerous, and they are recorded by persons deserving of all confidence, and thus they prove that the animals that have had typhus, either in the natural way or by means of inoculation, are preserved from all after-infection.

*Negative Facts.*—Camper relates that six beasts that had been inoculated by Grashuis, and perfectly cured, were attacked by an epizootic which afterwards prevailed, and four of them died.

Dufot, speaking of this inoculation as practised in Holland, says that one beast received the disease a second time by the same means.

Vicq. d'Asyr relates an example of a second infection, but he regards it as a doubtful case. "I must add one word," says the Marquis de Courtivron, "on a subject on which it is necessary that the public should be set right. During some late years, in Bresse, the Maconnais, and Bugey, it was thought that the cattle that had recovered from the disease, *after an exterior eruption that marked the danger to which they had been exposed by the pustules with which they were covered, could never again be attacked by this fearful malady.* On the faith of this opinion, an animal that had thus recovered was frequently sold for more than six times his value in ordinary times. It has, however, happened that this beast has died soon after it came into the hands of the purchaser; or he has been infected with the disease a second, a third, and even a fourth time. An animal that has escaped a second time has perished when the malady has been once more prevalent in the country; and this has proceeded to such an extent, that we have been enabled to collect a great many cases, proving incontestably that an ox that has been once attacked is not the less susceptible to after impression."

The clinical professor at the Royal Veterinary School at Lyons, in the *compte-rendu* of that school in 1816, says that "an animal cured of a contagious malady is liable to a relapse, and may contract the same disease a second time, if he is exposed to infection." He adds, "new experiments on the boasted power of inoculation have shewn that that operation does not preserve the animal from a second attack of the same disease."

M. Leroi, who observed the ravages of typhus in Italy in 1795, says that he witnessed a relapse in nine beasts, seven months after their apparent cure. "In another instance," adds this author, "I saw five beasts labouring under typhus; they seemed to be cured, and they continued apparently well for about ten months, when, typhus again appearing in the country, these beasts were once more attacked. Three of them died; the other two once more got well. Some of his colleagues, and particularly Professor Volpi, have assured me that they have witnessed similar relapses. Then, in the face of statements so contradictory, and made by persons deserving of the fullest credit, we must hesitate ere we acknowledge the boasted power of typhus, either to transmit to the healthy animal a mild disease of this description, or a permanent security from future attack. We must await the result of farther experiments on this very important subject."

E. *Some other Advantages of Inoculation.*—Messrs. Girard and  
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Dupuy have contended that there are other benefits connected with inoculation with the matter of typhus.

1. That the employment of inoculation gives the power of transmitting a mild form of disease to a great many animals at the same time.

2. That even in the supposition of the occasional transmission of severe typhus, it gives the opportunity of attacking it at its very commencement.

3. That it enables us to get rid of typhus at once among the cattle of a certain locality.

4. That it relieves the farmer from many of the inconvenient and oppressive consequences of the sanitary laws.

But are these advantages incontestable? It is presuming somewhat too far to say that the inoculated disease will always be mild, because there are many proofs to the contrary. Even in the experience of these very gentlemen, three cows died out of seven that were inoculated; and can they deny that this universal inoculation, for which they contend, must multiply the foci of contagion, and multiply also the cases of disease. If then, on the one hand, it has not yet been proved that inoculation will produce in the greater number of animals a mild disease,—if, on the other hand, it spreads the contagion without materially lessening the comparative mortality, would the authorities be justified in permitting this hazardous experiment? Would they suffer a measure to be employed, the good results of which have not been sanctioned by experience? Would they not prefer to put into practice other and simpler measures, such as quarantine—separation and the destruction of the infected to a certain extent, the manifest good effect of which would justify their employment?

However, this may be, and although we cannot yet positively admit that inoculation with the matter of typhus will preserve from a future attack of that malady, yet if experience should prove that, by inoculating with the virus produced in a mild case of typhus a disease of an equally mild character would certainly be produced, this practice would offer an immense advantage. We might then hope, by inoculating all the sound cattle in a country menaced by the contagion, and exposed to the destructive effects of the epizootic in its usual form, to save a vast number of animals. But the question is, Are we sure that these advantages would be obtained? Can we at the commencement of a malignant epidemic substitute a mild one in its stead? What is the history of the typhoid inoculation as it bears on this point? It has been proved that during the commencement and the violence of the epizootic, the inoculation by Bergius, Oeder, and Detlof in Germany, and Camper and Munnicks in Holland, and Vicq. d'Asyr in France,

was uniformly unfortunate—and that it was only during the decline of the epizootic, and when the malady had generally assumed a benign character, and only one-third of the animals that were attacked perished, that inoculation was employed with success.

If, in order to employ inoculation advantageously, it is necessary to choose the time when the epizootic has assumed a mild character, it can be of little advantage, for there will then be no material difference between the inoculated and the natural disease. There is only one circumstance under which the inoculation would be valuable, and that is when, in spite of all our precautions and medicine, the disease has established itself, and occupies a large space of country, and is fast destroying the cattle which it contains.

## CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

No. XXIII.

*By Mr. YOUATT.*

### PARTURITION—INFANTILE DISEASE.

ON the 18th of March, 1838, connexion took place between the female giraffe and one of the males, and again on the 1st of April. It is nearly certain that there was no other connexion.

On the 19th of June, 1839, I was at the Gardens early in the morning. This was 444 days, or 63 weeks and 3 days, or 15 lunar months, 3 weeks, and 3 days since the second connexion. I saw nothing in the appearance of the female to indicate the immediate commencement of parturition. She was lying down, not ruminating, but, as during several days past, occasionally licking her teats, which were swollen, and evidently painful. We had attempted two or three times to foment the udder, but she would not let us touch her. The external pudenda were not more swollen than during the last few days.

At a little after twelve o'clock I was sent for in great haste, her labour pains having apparently commenced. I found her standing, and her pains regular and of moderate strength. The two fore legs were protruding as far as the knees. I would not interfere.

Five or six minutes passed, and the labour made no progress. The muzzle then began to present itself—not between the legs, but bent over the left leg. I could see that the tongue was protruding, and black; in short, that the neck, curling over the legs, the little one would be speedily suffocated. I endeavoured to bring the head back into its natural position, but could not. Not a mo-

ment was to be lost. The patient was still standing, and, seeming to be conscious of her peril, suffered us to do as we pleased. I placed two keepers on each side, holding the corners of a blanket. I drew down the fore legs so far as I could, but the muzzle made no progress. I was enabled, however, to introduce my hand by a little bending of the neck, and, using some force, I pushed the leg back, and lifted the head over it. It came forward with a kind of spring, and, in less than three minutes afterwards, I had drawn the fœtus fairly out, and it was received in the blanket and laid on the straw. Nearly a minute passed and there was not a motion. "He is lost!" I exclaimed; when immediately came a spasmodic inspiration. "Oh! Oh!" said I, "then we may save you yet." I set the four keepers to rub him all over with pieces of flannel. He was thoroughly cleansed and well warmed, and, in a quarter of an hour, he was sucking a finger introduced into his mouth. We fed him with cow's milk warmed, for the mother would not suffer him to come near her, nor would she permit us to touch her udder. The day passed on: a nipple bottle was got for him—he was several times fed with a little warm milk, and he helped us as well as he could. No evacuation took place during the day.

20th.—The meconium was discharged during the night. It was a well-formed rounded piece, weighing fully two ounces. It had the appearance of compressed and hardened bile, and it had a slight bitter taste. No other fœces have passed. The mother will not suffer him to touch her, or even to come near her. Occasionally, however, she lowers her muzzle, and seems to try to recognize him, and she takes very great care not to run against him. We have bought for him a cow that had calved a little more than a month,—we could not at that time get one that had recently calved—and we fed him on her milk, warmed.

21st.—He has had an evacuation, and of a more fluid character than we wish, and he has purged three or four times: otherwise he seems to be in perfect health—gallops merrily round his house, and teazes his mother continually. Nature has evidently taught him where his proper nutriment is to be found; but she will not suffer him to touch the udder, although she takes a great deal of care not to hurt him while she is getting out of his way. Boil his milk, and mix a little prepared chalk with it.

22d.—The purging continues. He is not griped or uneasy, but as merry and bounceable as can be imagined. Still boil the milk—add more prepared chalk to it, and put a grain of opium in one of the doses.

23d.—The purging has stopped. He had no evacuation until noon, and then he voided an almost incredible quantity of hardened fœces, consisting chiefly of curdled milk. No evacuation took



place in the after part of the day. Still continue to boil the milk, and give prepared chalk in it as before.

24<sup>th</sup>.—All right—the fæces perfectly natural, and the little fellow as playful as a kitten. The mother will not yet suffer him to touch her udder, although she is a little more reconciled to his presence. We thought of forcing her, and we fixed a staple accordingly, but when we viewed her long and slender legs, and calculated the resistance that she would make, we were afraid. We tried in every way to coax her to let us milk her; but she would not permit us to touch her udder. Boil the milk, but omit the chalk.

25<sup>th</sup>.—No dung during last night, and none up to the noon of to-day. Boil only half the milk, and add the rest to it. With the exception of this constipation, the animal seems perfectly well. It is as playful as ever, and teazes us in order to be fed. He is happy when we are playing with him and coaxing him.

26<sup>th</sup>.—A very little bit of dung. Boil only one-fourth of the milk. The day passed over, and there was no evacuation. If there is none during the night, give early to-morrow morning two ounces of olive oil mixed with half an ounce of the syrup of buckthorn. Not the slightest appearance of illness.

27<sup>th</sup>.—No evacuation having taken place, the oil and the buckthorn were given about nine o'clock in the morning. About ten the bowels began to be acted upon spontaneously, or by means of the physic. There was not the slightest expression of pain, and the animal was as playful as before. The discharge continuing during the afternoon, the whole of the milk was boiled, and the chalk again had recourse to. At night he was as eager as ever for his supper, and sucked heartily at the milk thus prepared. He was as playful as he had ever been, and, with the exception of a slight but frequent purging, and which we hoped the boiled milk and chalk would subdue, there was not the least suspicion of illness.

28<sup>th</sup>.—He had selected his favourite corner, and a keeper, as had been the case from the time of his birth, sat up with him. The little fellow stirred not from the time of the keeper's taking his post until two o'clock, and, perhaps, he would not have stirred then, but the keeper had been ordered to give him some boiled milk with chalk at that time. He refused to take it. This, however, was not regarded, for he had begun to have a will of his own, and would not be fed by any one but his first and proper keeper. At four o'clock the watching keeper again offered him some milk, which he also refused; but as this had happened twice or thrice before, no notice was taken of it.

At six o'clock he took some boiled milk from his own keeper as eagerly and cheerfully as ever. The purging continued, small in quantity, and of the same character; but there was nothing about

him that indicated danger, or even illness. His keeper was one of the most careful men about the gardens, and would not have overlooked any obvious symptoms of illness. The superintendent of the gardens now came in; the giraffe was standing in the middle of his house, looking about him, and there was nothing that attracted particular attention.

A quarter past six had scarcely arrived when the keeper thought that the animal was uneasy. He fancied that the poor fellow staggered a little as he walked. He watched him, and the neck was twisted and convulsed in a singular manner. He every now and then plunged violently, and there was an occasional discharge of a yellow mucous fluid. I was immediately sent for.

I arrived about seven o'clock. He was scarcely able to stand. His neck was continually bent convulsively down to his shoulder and side. The spasm would then relax, and he would look around and recognize one and another of us, and come up to us and ask for food in his usual way. His countenance had much of its natural expression. The flanks were not much disturbed; but his muzzle was cold, and his legs were getting icy cold. I set four of the keepers to work to rub him, who brought back the warmth to his limbs, and, in a great measure, to his muzzle, and I gave him some warm boiled milk with opium, catechu, chalk, and ginger in it. We sent into town for some good starch, and some of that was boiled in his milk, with more of the same medicine which he had just taken; but his strength gradually failed, and, about half-past ten o'clock, he died.

29th.—Professor Owen, with a medical friend of his, superintended the post-mortem examination of this poor fellow. The three first stomachs were altogether free from inflammation, and their contents exhibited the natural acid principle, and not in too great a degree. The fourth stomach, however, was inflamed to a very considerable extent. The mucus was separated from the coat beneath by the slightest touch. The acidity was evidently greater than in either of the three preceding ones: this was tested by means of the litmus paper. In the duodenum the traces of inflammation were slight, but they increased in the jejunum—still more so in the ileum—and in the colon it was intense. In the cæcum and rectum it was slight.

The pancreas and the spleen shared in the inflammation, as did the mesentery and the omentum. In fact, the animal died of intestinal inflammation.

Professor Owen seemed to think that this inflammation arose from some unknown and undefined cause. I confess that I am more inclined to attribute it to the quality of the milk—good milk of its kind for the calf and for the human being, but not suited to the giraffe.

Inflammation, however, to such an extent having been set up, it was impossible to arrest its course. The mucous and muscular coats of the jejunum were so attenuated by the action of the acid principle upon it, that they yielded and evacuated their contents at almost the slightest touch. The death of so valuable an animal is a most painful circumstance; but I think that I can read some lessons of experience that shall not be lost upon us.

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## A CASE OF FRACTURE OF THE RINGS OF THE TRACHEA.

*By Mr. R. NICHOLSON, of Wormsley.*

[The writer candidly owns to me that he is not a graduated veterinary surgeon, and expresses in the introductory part of his letter, which it is unnecessary here to quote, much good feeling towards the profession; I therefore do not hesitate to admit his contribution.—Y.]

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A HORSE belonging to a farmer in the village in which I reside came up from grass with all the symptoms of broken wind. He was perfectly sound when he was turned out. He gradually grew worse until the middle of March, when he was occasionally threatened with immediate suffocation. He would suddenly fall when he was at work, and struggle for a minute or two, as if he was in the agonies of death. He would then get up again, and proceed with his load in evident distress. This would occasionally happen several times in the day.

At length I was sent for. I was immediately struck by the appearance of an evident indentation of the windpipe, and which the carter said was not visible until that day. It had not been observed until that day. The horse was in a state of great distress, and symptoms of approaching suffocation were too apparent. An immediate operation was necessary.

I had recourse to that invaluable operation tracheotomy. I divided the integument and muscles covering the windpipe at the depressed part, and dissected them back to the extent of five or six inches. I then took out a portion of the trachea, rather more than an inch square, immediately below the depression. To my great astonishment I found that the rings were actually broken, and, on introducing my finger, I ascertained that a false membrane had grown over them, and extended across the trachea, and a small aperture only was left for the purpose of breathing. I dissected out the



fractured portion of these rings, and introduced the usual tracheotomy tube, which I suffered to remain for several days. I then brought the external parts together, and healed the wound. The patient was fifteen years old.

He is now again at work, breathes freely, and is apparently healthy. I am at a loss to account for the occurrence of this accident, unless, when he was first turned out, he was forced over some rails by other horses that ran with him. The fractured rings would not destroy him, and the accident was not perceived; but, by degrees, a false membrane was thrown across the passage, and, at length, almost obliterated it.

## REMOVAL OF AN OSTEO-SARCOMATOUS TUMOUR FROM THE FOREHEAD OF A HORSE.

*By M. U. LEBLANC, M. V., Paris.*

ON the 25th of January, 1839, a cabriolet gelding, about ten years old, was brought to me, having, on the lower part of his forehead, an indolent tumour of the size of a large melon. It was of a hemispheroidal form, and somewhat moveable on its inferior part. Its greatest diameter was about ten centimetres\* above the insertion of its base, which commenced at six centimetres below the superior termination of the nasal bones, and reached three-fourths of the way up the forehead: it included the lateral and inferior parts of this region. The skin which covered it was tense, shining, and deprived of hair towards the summit, where were some scars of long standing.

The animal was in good health and tolerable condition.

There was a slight roaring kind of breathing through his nostril when he was quiet, and this increased considerably when he was trotted.

It was nearly two years since this tumour had begun to appear about two-thirds of the way down the forehead, and it was then attributed to a contusion. It rapidly increased, and the owner attempted to get rid of it by discutient ointments, and by the cautery.

During the whole of the time that the tumour remained the horse enjoyed good health, and was constantly employed.

In consequence of this tumour, however, he was degraded from being a cavalry horse to drawing a hackney-coach, and, at last, he drew one of those vehicles known in the neighbourhood of Paris by the name of *coucous-cuckoos*.

The animal was restricted to straw† and white-water for two days before the operation. On the third day I had him cast. His head

\* The French centimetre is .39371, or nearly two-fifths of an English inch.

† The French horses eat a great deal more straw than hay.

was firmly held by an assistant. I made an incision through the skin, round the tumour, at nine centimetres from its base. I then made two other incisions, one in the direction of the larger, and the other of the smaller diameter of the tumour, and reaching from the circular incision to the base of the tumour. I next dissected down these four divisions of skin, comprised in these crucial incisions, to the base of the tumour. I then dissected them off a little farther, in order that I might examine the construction of the base. I found that it was of an osseous character. I began to use my saw along the base of the tumour at the superior part of the forehead, and penetrated to about the depth of nine centimetres into its substance: I then stopped, when I perceived that the saw met only with some fleshy substance, and I attacked the portion of it on the nasal bones. An assistant, by means of strong hooks applied to the part that was cut through, drew the tumour forcibly forward towards the nasal bones, and I amputated the rest of the tumour with a bistoury. I met with considerable resistance on the lateral and superior parts of the tumour, towards the mesian line, and central point of its base. I avoided the resisting portions, which consisted of bony matter belonging to the large superior maxillary bones, and to the points of the two nasal bones. The bistoury separated the soft parts from these bones, and the tumour was soon entirely removed. The two superior maxillary bones formed on each side, at their nasal border, a symmetrical projection, evidently occasioned, at first, by their deviation outwards, and afterwards by some rough and irregular exostoses, which were developed in two longitudinal lines upon their borders. I presently removed these by the assistance of a mallet and sharp chisel. Their tissue was very compact. There remained nothing more, then, but the projection of the median line, and this was surmounted by a roughened crest, which had penetrated into the soft part of the tumour to the depth of three centimetres. This appertained to the prolonged portion of the superior nasal bones, and was formed of a spongy tissue, difficult, nevertheless, to cut through with the bistoury. The whole of this portion of the nasal bones had the same texture. In endeavouring to cut down and to equalize these surfaces, so that the head might resume its pristine form, a portion of the nasal septum, to nearly the extent of six centimetres, was loosened. I immediately removed the detached part.

In the region where the superior nasal bones had been separated by the presence of the tumour, the upper portion of them had acquired considerable development. There was a chasm between them; and the tumour had, as it were, made an irruption into the nasal fossæ, and some of the bony growths had slightly compressed

the corners. It was impossible for me to isolate the mucous membrane which covered these growths, and the tissue of which consisted of very dense fibre. The nasal fossæ were laid open—that on the right side to the extent of five, and that on the left side to ten centimetres.

The hemorrhage was not very great, and I had occasion to take up only two divisions of the facial and glosso-facial arteries. The blood from some of the minute arteries belonging to the osseous structure was readily stopped by means of the actual cautery at a white heat.

The maxillary branches of the tri-facial—fifth—nerve were not wounded.

Although the hemorrhage was not abundant, yet some of the blood ran into the nostrils, and thence into the trachea and bronchi, on account of the position in which I had been compelled to place the head during the operation. This annoyed the animal, and rendered the respiration somewhat laborious towards the close of the operation; all this, however, ceased when the horse was again upon his legs.

I finished the operation by bringing together the flaps of integument which I had preserved, and uniting them by the interrupted suture: this being done, the head of the animal appeared no longer deformed.

The tumour weighed eighteen pounds. Its greatest diameter was thirty centimetres, and its smallest was twenty. It was formed partly of white fibrous tissue, creaking under the scalpel, exceedingly dense, and ossified at certain parts, and partly of encephaloïd tissue, of which some masses were softened. The fibro-osseous tissue was principally observable on the osseous portions of the superior nasal bones, and where they had connexion with the parts beneath. In the centre of the tumour was a considerable quantity of fluid and coagulated blood, and some of the cavities contained a gelatinous substance of a clear yellow colour.

It appeared to me probable that the original cause of the tumour was a fracture of the nasal bones. The tumour had developed itself between the ends of the fractures. In the course of its development it had separated these bones, the one being driven from within outwards, and the other very little displaced. The same, to a certain degree, had taken place with regard to the maxillary bones.

After a fever of reaction, which might well be expected, and which continued four days, suppuration was established. On the second day the right lymphatic intermaxillary ganglions were a little swollen, but they soon resumed their normal state.



The horse required little more care than attention to his diet. This was very much restricted during four days. On the fifth day he began to eat a little hay and oats.

At this time (February 28), thirty-one days after the operation, the wound is rapidly cicatrizing, and the openings which were made into the nasal fossæ are almost entirely closed.

## THE VETERINARIAN, AUGUST 1, 1839.

*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

MOST of our readers are doubtless aware of the decease of Professor Coleman. That gentleman departed this life on the evening of Sunday the 14th July.

The biography of a man who for nearly half a century presided over the Veterinary College of England, and whose influence, directly or indirectly, gave a tone and character to all its proceeding, is sacred property among us; and in due time—at no distant time—we will endeavour to discharge our duty. All remembrance of alienation or of injury—all records of “pressures past,” shall “from the table of our memory” be wiped away; and the desire faithfully and truly to chronicle the early history of our profession, “shall live within the book and volume of our brain.”

We earnestly entreat those who were spectators or actors in scenes of from thirty to fifty years ago, to favour us with facts and anecdotes and personal observations which may assist us in our labour. Their communications shall be sacred, and they shall not be abused. To whichever of the Editors of THE VETERINARIAN the task may fall, the writer of the present article promises thus far.

In consequence of this event, a meeting of the governors and subscribers was summoned for the 30th of July. Our readers cannot possibly, through our ordinary means, be put in possession of the result of this meeting until our next number; but we will endeavour that an abstract of the proceedings shall appear in the Mark Lane Express of the 5th of August. Of two things, how-

ever, we may be certain—that Mr. Sewell will be elected Chief Professor, and Mr. Spooner, Assistant Professor.

In the mean time it may not be uninteresting or unuseful to take a short review of the origin and progress of the Veterinary College, and of its present position.

Towards the close of the eighteenth century, and when veterinary schools had been established in most of the continental states, and the consequence had evidently been that many of the epidemics and other diseases of horses, and of cattle and sheep, had been diminished in number and intensity, some of the members of the Agricultural Society at Odiham asked themselves, Why should not the advantages which the continental states enjoy be extended to Great Britain? After much deliberation, they determined to send three young men to the school at Alfort, to be instructed in veterinary science, and prepared to treat the diseases of every animal with which the agriculturist had to do.

Their journey, however, was prevented by the arrival of M. Sainbel in England, who had distinguished himself at the Veterinary School of Lyons by his study and knowledge of the external conformation of the horse, and by a Prize Essay on the treatment of some of the diseases of the feet. He afterwards removed to Alfort, and there bore away the prize on the same subjects; but, disagreeing with his professor, he at length came to England, and proposed to deliver a course of lectures on the conformation of the horse. His dissection of Eclipse added to his fame; and it presently began to be supposed, that he who appeared to know so much about the horse must be qualified to conduct a veterinary establishment. The journey of the young man was suspended, and a veterinary school was established in England under his superintendence. This was a flagrant and an irreparable error; for Sainbel knew nothing of the diseases and medical treatment of cattle. He rarely travelled from the only point on which he found himself at home; and every animal except the horse was, if not excluded, altogether neglected.

Neither the Odiham Society, nor those who became the early patrons of the Veterinary College, meant this; for the original programme of the institution at St. Pancras stated, that “the grand

object of the Institution was to form a school of veterinary science in which the anatomical structure of quadrupeds of all kinds, horses, cattle, sheep, dogs, &c., the diseases to which they are subject, and the remedies proper to be applied, may be investigated and regularly taught, in order that by these means enlightened practitioners, of liberal education, whose whole study has been devoted to the veterinary art in all its branches, may be gradually dispersed over the kingdom, on whose skill and experience confidence can be securely placed."

So said the programme; but the Professor was a horseman, and nothing but a horseman; and no one can wonder if the instructions of the school became devoted to the horse alone, and every other animal soon became virtually excluded.

Ere the second year of Sainbel's professorship had passed, he was called to another world. Mr. Coleman, a young surgeon of much promise, and who had distinguished himself by his experiments on suspended animation, was chosen as his successor. We have heard that Mr. Coleman was averse to undertake the charge of patients so different from those whom he had been accustomed to treat. We give him credit for this honourable feeling. He, however, was appointed.

Can we wonder if, finding that, under his predecessor, this *veterinary* school had dwindled down to one of mere horse-knowledge and practice, and that without rebuke from the powers that were, he, although with infinitely superior talent and acquirements, should content himself with pursuing the same career that his predecessor had done?

Some time afterwards another circumstance occurred that sealed the fate of the College. The Board of Agriculture ceased to exist. There was no longer any control from this most influential quarter, and there remained only the Governors to conciliate, and that was no difficult affair.

We acquit not Professor Coleman of much serious negligence. He was well aware that the intentions of the founders of the Veterinary College had not been followed out, and that he was not following them out: but there are few persons who would not have pursued the same course; and the blame was more than shared by those who



contentedly, and without inquiry, suffered the original purposes of the institution to be so glaringly abandoned.

Twenty, thirty, and more years now passed by, and the Professor pursued the same course, and with more determination, because he received no rebuke. His attention, and that of the student, was confined to the horse. It was scarcely dreamed of within the College walls that there were other portions of the farmer's and the nation's wealth that required attention and care; or that there were other animals, valuable to the agriculturist, which were left to perish. Too often, indeed, he would hear of the fair prospects of the country practitioner being altogether blasted by the lack of that instruction with regard to other animals which ought to have been given to every pupil. Too loud and too deep were the complaints, of negligence with regard to the inferior animals; and, at length, of the endless repetition of the same worn-out and discarded opinions with regard to the horse. Sometimes he would meet with severe rebuke from his elder and more influential brethren; and once the promise was extorted and *recorded*, that "in the event of his introducing any person to a share of the lectures heretofore given by himself, it should be incumbent on such person to give the general structure and economy of cattle, sheep, dogs, swine, and other domestic animals, the diseases to which they are subject, and the remedies proper to be applied; and that, towards defraying the increased expense of this and other arrangements, the sum of five guineas should be deducted from the amount of the fee at present paid by each pupil to the Professor."

We do not, therefore, wonder that Mr. Coleman so obstinately pursued his course; that even in the last year of his professorship he laboured so hard to prejudice his pupils against the projected improvement; and that, so near to the close of his career, he adroitly neutralized the efforts of those who wished to unite together the interests of Agriculture and of the College. Let him pass! He had his good points as well as his bad.

What is the state of things at present? A new Agricultural Society has sprung up, which, avoiding all political disputation, has established itself in the good opinion of the whole agricultural body, and ranks among its members the leading men of every party.

Its numbers have doubled within the last few months, and it possesses sufficient power to accomplish every good purpose.

That Society has looked around its vast possessions, and has rightly estimated their money's worth. It finds that the aggregate value of our noble breed of horses amounts to nearly twenty-two millions of pounds, but that the value of our cattle, sheep, and other domesticated animals exceeds more than one hundred and twenty-eight millions, nearly six times more than that of the horse. It offers to ally itself with the Royal Veterinary College. Notwithstanding there is this overwhelming difference in the value of these classes of animals, it wishes not the slightest curtailment of the instruction which appertains to the horse; but it demands, and it will enforce that demand here or elsewhere, that equal attention shall fairly, honestly, fully, be paid to that portion of veterinary instruction which has reference to their more numerous and inestimable flocks and herds.

How great a proportion would *we* yield of a life that, in truth, is now drawing near its close, if we could meet these men as Mr. Sewell and the Governors of the Veterinary College may do! "Come among us," we would say. "Help us, although late in the day, to make our institution what it was designed to be. We have done our country some service with regard to the horse,—the horse unequalled even on his native sands. Let us now see whether we cannot mitigate or avert the diseases by which so many of our cattle are swept away, and millions of our sheep destroyed. Our horses—our cattle—our sheep! the world cannot produce the like of them! A thousand years may pass, and we should not have the same cause for self-gratulation, and the thanks and the esteem of our country!"

Such would be our feelings, and such, we trust, will be the feelings of the Professor, and of those who hold sway at the College. The time is past for those half measures which have hitherto degraded our profession. The heart must be thrown into a cause like this.

Let the Professor, that is to be, use the influence which he possesses, and establish *an honest and an effective school of veterinary instruction, embracing all these noble objects*, and he may with truth say,

Exegi monumentum ære perennius  
 Regalique situ pyramidum altius :  
 Quod non imber edax, aut Aquilô impotens  
 Possit diruere, aut innumerabilis  
 Annorum series.

And now, disavowing, and most truly, all dictation, but embodying that which has been the result of many an hour's anxious thought, we venture to sketch the outline of a plan which promises fully to carry out this noble purpose.

If lectures, and those honest and efficient, are to be extended to so many animals, it is evident that the number of professors must be, at least, the same as immediately before the death of Mr. Coleman, and we would thus arrange them :—

1. The Director of the Institution, who shall also be Professor of the Pathology of the Horse, and Head Professor of the Clinical or Stable Department.

2. The Professor of Anatomy and Physiology, and that extending to the Horse, Cattle, Sheep, Swine, Dogs, &c., and who shall also be Assistant Professor of the Clinical Department.

3. The Professor of Pathology and Clinical Instruction, as it regards Cattle, Sheep, Swine, Dogs, &c.

We think that we shall not offend either of the present Professors, when we state it to be our decided opinion that neither of them should occupy this chair. They will have their full measure of labour and anxiety in their respective situations, and it requires the undivided exertion of the most talented and experienced veterinary pathologist to do justice to this professorship. All the diseases of all the animals beside the horse!—it is an Herculean task, and admits of no other direction of the thought.

It surely would not be difficult to find such a man, of some education—of more talent—of long experience in cattle practice, not past the middle of life, and all his faculties unimpaired.

4. To these we add a fourth Professor; and it has really been a disgrace to the College that such an one was not appointed many a year ago. Lecturers on general chemistry and human pharmacy have kindly opened their theatres to our pupils; but it is the know-



ledge of veterinary pharmacy that we want, and which alone will prepare us for our profession : therefore, we fearlessly add—

4. A Professor of general Chemistry, Veterinary Materia Medica and Pharmacy, Botany, and the first Principles of Agriculture.

To these must be added an Assistant Demonstrator, who shall be Curator of the Museum, &c.

The Professors of Veterinary Anatomy and Chemistry should be permitted to form private classes, to which they may impart other and more minute information than the public course of lectures could contain.

If the student possesses such additional and important advantages, the initiatory fee should be considerably increased, the division of which might be easily arranged.

The residence of the pupil at the Veterinary College, prior to his presenting himself for examination, should be two years, unless he had served an apprenticeship to a veterinary surgeon ; in which case the term of residence might be diminished in proportion to the length of his apprenticeship.

These two last regulations would work wonders, as to the character and improvement of the pupil.

More attention should be paid to the shoeing department, and every student should be compelled to pare out the feet of and to shoe two horses in every week.

The education of the veterinary surgeon thus extending to new patients, with the pathology of which the human surgeon has little acquaintance, the present and all future vacancies at the examiners' board should be filled up by veterinary surgeons.

There are circumstances which come nearly home to him, but to which he must not yet allude, which have induced the Editor to place himself thus forward in matters that so deeply affect the veterinary profession ; and he must be permitted to say, that he feels it to be the duty of *every well-wisher to the profession* to come unhesitatingly forward, and to express his feelings and wishes, in this situation of veterinary affairs. We wish to urge nothing unnecessarily intrusive ; but it would be gratifying to those who have the direction of our affairs, to find that they were supported by the good opinion and good wishes of the profession at large : and, from

the expression of the opinion of the united profession, good would necessarily arise.

We cordially recommend to our readers, and to the profession generally, the suggestion of our friend Morton. It is like him, and worthy of him. When affairs are comfortably settled at headquarters, we will return to the consideration of it.

Y.

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## REVIEW.

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Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

*On the Vices of Horses.* By BRACY CLARK, F.L.S. Member of the Royal Institute of France, &c.

WE have perused this little work with very great pleasure. It seems to be full of the amusing and good-tempered anecdote of an observant, and talented, and kind-hearted veteran. Who has not occasionally felt the charm of this?

We were going to say O! si sic omnia!—but there is not a cross word in the whole of the book, and we will not utter one.

Mr. Clark gives us a history of his attempts, successful and unsuccessful, to cure most of the vices of horses. Some of them are highly amusing as well as instructive. He speaks of crib-biting, swerving, rearing up before, running away, kicking, shying, and startling. We select the greater portion of what he says on crib-biting; not as being the most valuable portion, but a subject that has often—some say, too often—come before us in our late numbers. It is completing the group.

We cordially recommend the perusal of this pamphlet.

“The crib-biting horse has generally a lean constricted appearance, the skin being drawn tight about the ribs, the hair staring and thready, and devoid of gloss, a sunken watery eye, or else too dry, the muscles of the face also, as well as the skin, drawn up with rigidity, and, when unemployed in eating his almost constant amusement is, to grasp with extended mouth the rail of the manger with his front teeth, then to draw himself up to it, as to a fixed point, by a general contraction of all the muscles of the head, neck, and trunk; at the same time this effort is attended with a grunting sound, apparently from air expelled by the mouth; a relaxation succeeds, and then a new effort, slaving the manger very much with the tongue, for, as the mouth is held wide open, and the jaws distended, the saliva naturally takes this direction.

“The horse that has contracted this unsightly habit grows lean, his

digestion, after a time, becomes impaired, and it is generally conceived that he draws air into his stomach, which is the cause of this; his temper becomes soured, and more or less weakness and unfitness for service ensue, according to his natural strength, for some do not appear to be materially in this respect injured by it, while others are obviously rendered much weaker by it, and more incapable of a proper day's work; it appears, indeed, that horses of a fiery, hot, and unkind temper get the most easily into this vice. How this extraordinary propensity becomes first created, has not been, we believe, much attended to, and with some it appears to arise naturally, as though the sucking of the air gave them pleasure, or a relief from some sort of suffering; and at first we imagined that pains in the stomach from acidity or other causes might create it, as we see horses eat dirt or know the walls to alleviate unpleasant feelings of this organ. But bad digestion and foul feeding are probably more often a consequence than a cause of this malady, and we observed that horses at all disposed to it may easily be led into it by the practices of the groom in cleaning them, of which we can have no doubt; for if they clean them before the manger, and irritate them with too severe a comb, and in parts where they cannot endure it, they seize upon the manger for a counter-action to their sufferings, and in doing this they first get a habit of it, and which may afterwards extend to the removing of other pains or distressful feelings. By this means, and especially if the grooms, and some have a happy knack of this after every bite, put in a blow or stroke of the comb, when following each other in regular succession, they thus create a vice which may or may not continue afterwards, according to the situation or circumstances of the individual. Some are said to get it by imitation of other horses: whether or not the same practices of the groom, applied to several horses in the same stable, should not be rather apprehended to be the true cause, we are not assured; but, in one instance, we think, we observed this satisfactorily enough to be the cause, though it passed for imitation.

*“To prevent the habit, it appears but reasonable, with regard to such horses as are inclined to it, always to turn them from the manger before they are cleaned with their heads to the heel-posts, or indeed to clean them in the open air, and above all, to avoid as much as possible irritating those that have preternaturally thin and irritable skins, by too rough an iron comb, and also to break through any regular habit already induced of biting after each stroke of the comb, for they learn to do this at first only in the most sensible parts, as with the flanks, the inside of the thighs, the belly, &c.; but afterwards in every part on the slightest touch of the comb, or even at the sight of it. Some horses, it must be admitted, are truly difficult to clean, and many also are rendered more so than they*



need be by inconsiderate rashness and ill-applied severity. To prevent these associated actions and mischief, proper precautions cannot be taken too early, for a habit of this kind once formed, is not easily afterwards to be subdued, even by great patience and well-judged measures.

“*To cure* or break horses of this vice is difficult: cutting off the end of the tongue has been resorted to by some as a cure for it; the soreness created by this means destroying the inclination to the trick for a time, when the habit once being interrupted, might or might not again return.

“Another and more usual way with these horses is to buckle a strap tight about the neck, so tight as to prevent, by the restriction of the throat, the power of doing it, or, at any rate, to create sufficient uneasiness to disincline them to do it. Great care should be taken however in doing it, not to damage the trachea or larynx.

“In concluding these remarks we may observe, that in the purchase and sale of horses this vice is not unfrequently a subject of litigation: should we venture to interpose an opinion on the question usually agitated on those occasions, whether a horse be unsound or not, or, in other words, returnable or not, with this defect, we should say, if the warranty extended to soundness only, the horse is not returnable, as horses are often sound with it as to going; but if vice is stated in the warranty, the horse is unquestionably returnable, as it may be ranked among the worst of them.

“The jurisprudence of horse-buying and selling, or security from deception, has never yet attained to any thing like consistency in this, or any other country probably, and very contradictory decisions are often arrived at in these cases. A settling of this ticklish question is more than I can at present hope to accomplish; however, the following is what at the present moment appears to me equitable, and we leave it for future examination. A horse that is being curried with that abomination and scourge of the race, the sharp iron curry-comb, made without rule, and used without discretion, if a horse having this weapon aimed at his loins, or his flank, or inside of his thighs, expresses his aversion by seizing the manger, the wall, or the rope he is tied up with, between his teeth, such is not necessarily to be esteemed a crib-biter, as very many horses do this, and without ever becoming crib-biters. But if such horse, on going into the stable, should practise this habit when no comb is touching him, or is in sight even, then such horse shall be deemed *returnable*, or is a deficient horse, having a vice which the warranty should not fail to include in it, and especially so if he throws his mouth very wide open, and sucks his wind, as he is then not only with a *vice*, but also in a fair way, by weakening his stomach, to become diseased, from a bad digestion of his food, and all its natural consequences.

“ The Arabians, whose horses have the finest and most glossy coats of any in the world, use only a little camel’s or horse’s dung grasped in the hand, or of straw, to clean them with, and all nearly may be done that is really necessary by a judicious use of it, or by hay-bands still more soft: and, we are assured, it would be much better often to let it go undone, rather than to irritate the animal to such a degree, as to excite his violence, or create a miserable vice of this sort; for dirt even will fall off of itself if left, without much injury or inconvenience to the animal; that to be too tenacious about it in all cases is little less than a folly.

“ Where however, the vice of crib-biting has taken place and has become a confirmed habit, there is no better way of breaking them of it, that we at present know of, than Yare’s muzzle, formed of light thin plates of iron crossing each other at right angles nearly, and at the bottom of it, or next the lips, with two thin iron bars, parallel and nearly flat, and a little projecting. Now these will admit the lips through to take up hay or corn, but will not allow the teeth to come in contact with the manger. Having experienced the great utility of this apparatus, I assisted in procuring for him the silver medal of the Society of Arts about ten years since, in whose volumes a more particular account of it may be seen.

“ In Yare’s apparatus, the above muzzle is sustained about the mouth of the animal, by the usual stable headstall; we should propose however, a great improvement in its effects and office, by carrying the transverse, or occipital strap, to some distance from the base of the ears, and so not irritating them; and also, and which is worse, from the pithing place of the neck also, or the open space of the *Atlantal hiatus*, the tenderest and most fatal part of the whole horse, laying it rather upon the chine of the neck, or *Encolure*, as the French would call it, instead;—a system first observed upon by us, and more fully explained, in the essay, *On the Bits of Horses*, and which we there shewed was also well understood in the more enlightened periods of the Greek and Roman empires.”

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*Cattle Pathology, or a Treatise on the Pathology of the Ox.*

By P. B. GELLÉ, Professor of the Royal Veterinary School of Toulouse. Huzard, Paris, 1839.

SUCH is the translation of the title of a work now passing through the press, and written by this talented and excellent instructor. Professor Gellé has long been distinguished for the ardour with which he has distinguished himself in the improvement of veterinary science. He has selected this particular de-

partment of it, and even the pages of our Journal will bear ample testimony to his zeal and his success.

When we glanced at the first pages of his intended work, and which have very lately come into our possession, we were struck with the motto, "Let every one tell that which he knows, all that he knows, and nothing but what he does know." How rapid and triumphant would be the march of truth, if this were engraven on the memory of every inquirer, and all his researches and all his proceedings were regulated by this sacred principle.

We turned the leaf, and with increasing interest, and with fast-growing regard for the writer, we read the following dedication:

TO  
FRENCH AND FOREIGN VETERINARY SURGEONS;  
TO  
THE LANDED PROPRIETOR AND THE AGRICULTURIST;  
TO ALL WHO ARE OCCUPIED IN THE BREEDING OF DOMESTICATED ANIMALS  
AND THE PURSUIT OF VETERINARY SCIENCE,  
THIS WORK IS DEDICATED,  
AS A TESTIMONY OF MY SINCERE ESTEEM.

GELLE.

Had we never known or heard of the writer, we should have been prejudiced in his favour; but having known and communicated with him, and had demonstrative proof of his sincere devotion to his profession, we began to peruse his introductory pages with unusual and deep interest.

It almost seemed—we well knew that that could not in reality be—as if the Professor had the English school, and the English veterinary surgeon, in his mind's eye when he commenced his preface. "An immense chasm exists in medical veterinary literature—and that is, an accurate description of the maladies of cattle, based on experience and practice." The chasm is wider and deeper here, and more lamentable have been the consequences with us than with him; but the time is arrived when preparation is making to fill—to obliterate it for ever, and to make the path of veterinary study and science facile and plain, and leading to the grand storehouse of every truth connected with agriculture and with humanity.

He states it to be his object to collect, and bring into one field, every truth that has hitherto been disseminated with regard to the physiology and medical treatment of those animals whom the veterinary surgeon had too long neglected, and his determination to state the truth, wherever error or neglect of duty might be disclosed. "I write," says he, "for science—for the veterinary surgeon and for the agriculturist. I belong not to any party; and if I should be opposed to the prejudices or to the errors of others, I disclaim all intention of giving offence, for I advo-



cate no system. I have learned that the way to arrive at truth is to discard every exclusive theory. Truth is my object, and experience my guide. At all events, if I do not fully accomplish my object, I shall have traced out a path for others to traverse to its very end."

It would seem, indeed, as if this book were written for us in the present situation of veterinary affairs. We will avail ourselves of the advantage. The work of M. Gellé will contain the latest and the best founded opinions with regard to the diseases of cattle—the opinions of the Professor of that school which was founded for the express purpose of disseminating the knowledge of cattle-practice, and which the original school of Bourgelat had too much neglected. Our review of this work will be somewhat extended, but, we trust, not tedious. The Professor of Bovine Pathology in our school—whoever he may be—will thank us for it; and the student will not be displeased at having the opportunity of comparing together the theory and the practice of the two schools. We are not answerable for any of the peculiar opinions of the Professor. Our object is to put the reader in possession of them, and leave him to draw his own comparison. The present portion of our review may be somewhat uninteresting, but it is important, as preparing for that which will follow.

The Professor takes a rapid review of the opposite processes which are constantly carrying on in the living frame—that of assimilation, including digestion, absorption, sanguification, circulation, secretion, and nutrition, and that of dissimulation, as transpiration pulmonary and cutaneous, the urinary separation and defecation. Of the proper balance of these health is the result—their disturbance is indicative or productive of disease. The practice of medicine consists in preserving the proper balance of these functions, in the discovery of every departure from them, in the remedy of the consequences of that departure, and the re-establishment of the proper and natural action of the various parts. For the admirable illustration of these points, and for much serious and important advice with regard to the prevailing habit of wildly theorizing about them, we refer to the work itself. Our concern is, the action and influence of every vital cause on the ox. One observation with regard to bleeding we must quote:—

"Bleeding has a salutary effect in the greater part of the diseases of cattle, doubtless on account of the peculiar development of the venous system in the animal, and particularly that of the vena porta, by reason of the immense quantity of blood which goes to his vast digestive organs, and which also explains the frequency of essential or secondary hepatitis in this animal. Notwithstanding, therefore, that bleeding will often be of the greatest utility in the diseases of the ox, not only to avoid or to arrest the progress

of inflammation, but, still more, to prevent or to remedy those stagnations of the blood so frequent in the diseases of this animal, and particularly in the typhoid affections to which he is subject, yet, with respect to the quantity to be abstracted, regard must always be had to various points, namely, the capacity of the chest—the peculiar constitution, the age, the climate, the kind of food, and also to the development and the concentration of the pulse, the continuance of the disease, and the extent to which injury has been done to or threatens the morbid part.

“It is, most of all, necessary that the bleeding should be employed opportunely, for it is almost always injurious to the ox when it is tardily practised, and even in inflammatory diseases, when they are beginning to assume a chronic form. I long practised veterinary medicine in Poitou, and I have seen many sick cattle in Languedoc. I could take from the cattle of Gascony, and a great part of the south, a quantity of blood which would have infallibly killed those of Poitou, l’Anjou, and Brittany. I do not think that bleeding is attended by any revulsive effect, as has been often asserted; but I believe that it establishes an equilibrium, by inducing capillary absorption in the mesh-work of the tissues. The place at which the bleeding is practised is far from indifferent. In serious cases, after having made one general bleeding, we ought to localize, as much as possible, the abstraction of blood. Bleeding is often indispensable in young cattle that are in high condition. We ought to be more circumspect, more averse to part with blood, when a beast is very fat than when he is in good and healthy condition.

“Much has been written with regard to the temperament of cattle. It is said to be sanguineous, or nervous, or muscular, or lymphatic, according as either of these systems predominates. There is in every man, and in every beast, a certain conformation, or a certain physiognomy corresponding with his peculiar temperament, and that temperament has much influence on the production and the continuance of health and disease. It may be modified by age, but it is a powerful predisposing cause of both of them.

“No rules, however, can be laid down as to the temperament of these animals. It is all relative. Some writers, considering the predominance and the development of the lymphatic system—the abundance of cellular tissue—the little development of the thorax, the amplitude of the belly, and the relaxed constitution which characterizes certain breeds of cattle, have thought that all these animals possessed a temperament essentially lymphatic. Others, placed among breeds more happily formed, as in the south, where the thorax is large, and the hepatic venous system highly developed, and the vital energy more fully and strikingly pronounced, and the abstraction of blood in various diseases being attended with evident and essential benefit, recognize in this animal

the true sanguine temperament. If, however, we consider the smallness of the heart in the ox, compared with the bulk of his frame, the deficient development of his arterial system—the multiplicity and extent of the vascular-lymphatic system—the abundance of cellular and adipose texture—the tardiness of every movement—the tendency of his diseases to assume a chronic character, the difficulty of establishing suppuration in him in case of abscess—and, in low and marshy countries, the evident feebleness of the vital energy—these circumstances sufficiently prove the essential temperament of the animal, and read an useful lesson to the practitioner as to the course which he has to pursue. Yet there are exceptions even to this in the mountains of Auvergne, and the plains of La Vendee, the valleys of Normandy, and the rich pastures of the Garonne, and of Lot.

“The castration of the males at the age of six or nine months, or a year, likewise modifies the temperament of the ox, diminishes his vital energy, and disposes him more readily to submit to the influence of the lymphatic temperament which is natural to him.

“There is a special character about the pathology of the ox. His diseases and their symptoms have peculiar characters, compared with those of the horse or the dog. They have mostly reference to the digestive organs, on account of the enormous development of these viscera.

“The diseases referrible to the nervous system have also a peculiar character in the ox. Far more than in the horse they assume the character of paralysis, vertigo, and similar diseases. To this also we trace the frequency of syncope during and after bleeding. It is this which predisposes calves, and bulls, and heifers, and some cows to attacks of the pestilential fever of Hungary, and to the gangrenous ulceration of the marsh. To natural feebleness of the constitution we trace the frequency of tubercular affection in the ox, induration, and scirrhus, and cancer closely following almost every inflammatory disease; and this will also account for the slowness with which setons and vesicatories act, and the little effect which they produce, even when they are stimulated to action.

“Finally, in this way we explain the fact, that the maladies of these animals take on so treacherous a character as they do, and so easily impose on young veterinarians. A deceitful calm, a species of insensibility, a degree of stupidity, mask affections of the most serious character, especially inflammations of the digestive organs, such as enteritis and dysentery. The experienced surgeon, however, is soon compelled to regard the concentration of the pulse, and the false appearance of the absence of pain of every kind, as indications of the most serious and fatal character.”

After this the Professor distributes the different diseases of cattle according to the organs which they attack. He commences



with the digestive organs, of the anatomy and physiology of which he gives a lengthened and accurate description. The physiological portion is most excellent. We, however, must hasten to the diseases, into the consideration of which we shall enter somewhat fully. We are disposed to advise our readers to take the volume on "Cattle," by the writer of this review, and compare together the accounts given by the two authors. We do not ask them to shew any mercy to the Englishman. We shall be quite content if the truth is elicited by a comparison of the two, and that frequently to the credit of the French Professor.

"*Inflammation of the Mucous Membrane of the Mouth.*—We often recognize this as a symptom of other disease, and but rarely meet with it as a distinct disease. Let us hear the Professor:—

"I have sometimes been consulted about oxen with a hot or burning mouth. The tongue is red, the palate swollen; a thick and viscid saliva runs from the mouth, or, sometimes the mouth is quite dry. There is a constant disgust to food. This disease appears in the spring, after the cattle have been turned into the pastures. It is a consequence of the turgescence of every part which the abundant nutriment suddenly afforded produces, and it is usually accompanied by slight inflammation of the stomachs and intestines. A bleeding from the jugular will generally remove it, especially if the nutriment be restricted for a little while to gruel with less solid food. It sometimes occurs at the beginning of winter, in animals that are put up to fatten. This is the consequence of plethora from the sudden administration of too abundant food. Bleeding and water gruel will be all-sufficient.

"*Barbillons*, supposed to be an enlargement of the terminations of the sublingual and other glands. It has nothing to do with these glands. It is simple inflammation of the buccal membrane, with the appearance of pustules. It is usually indicative of inflammation, more or less extensive, of the organs of digestion.

"*Aphthous Inflammation of the Mucous Membrane of the Mouth. (Thrush).*—This is apt to occur from the use of damaged food, bad water, feeding on plants covered with dew, change and of temperature. Little vesicles appear in various parts of the mouth—the saliva, mingled with mucus and foam, smells unpleasantly as it drivels from the mouth—the tongue is swelled and red—its papillæ are enlarged—it sometimes hangs out of the mouth, and almost threatens the suffocation of the animal. The vesicles break, and a small ulcer remains; these ulcers spread over a considerable portion of the tongue and the mouth, and occasionally they reach the palatine arch. They become contiguous to each other—they form different groups of ulcers with an elevated callous edge, and sometimes they are covered by a black adynamic muco-purulent fluid.

"I have always," says he, "considered these aphthæ as inflam-

mation of the mucous follicles of the buccal membrane—the follicles can be distinctly seen while the inflammation exists. These crypts in this state resemble little white points which have a minute red spot in their centre. Becoming prominent, and surrounded by an inflammatory areola, they increase in size as the inflammation becomes more intense. The essence of the disease consists not in tubercles, or vesicles, or pustules, as some have pretended, but in inflammation of the follicles.

“This is a very serious disease when it has been neglected, and the muco-purulent matter discharged from them has corroded the neighbouring parts, and ulcers, more or less extensive, cover the tongue and the membrane of the mouth. Now, the effects of the lymphatic temperature of the ox begin to display themselves, and the ulcerative and decomposing process goes on, and his powers sink, and he is hurried away—one mass of corruption.”

Professor Gellé quotes a case from his note-book, the narration of which will put us in complete possession of the French theory and practice in this disease.

“August 14th, 1824.—I was consulted respecting an ox, four years old, that had been attacked by aphthæ. Young, and in good condition, he presented the following symptoms. The mouth was open, and an abundant viscous saliva ran from it. The tongue was protruded far beyond the lips. It was hard, tumefied, red, inflamed, and covered by a multitude of small aphthous and confluent ulcers, which formed and extended as far as the frænum. The palate, as well as the whole interior of the mouth, were covered with aphthæ, which spread over the lips and to the orifices of the nostrils. The pituitary and conjunctival membranes were red and injected—the pulse accelerated and full—the thirst excessive—the patient greedily seized every kind of food, but, being unable to masticate or to swallow, he presently dropped it. The disease seemed to be wholly confined to the mouth, and there was an apparent healthy discharge of every other function. The illness had existed eight days, and an empiric, whose fame extended over all that part of the country, had declared that the case was incurable.

“He affirmed that there was a chancre in the thick part of the tongue, which was rapidly eating it away, and which would destroy the animal. This case had made a great noise in the neighbourhood.

“I abstracted six pounds of blood from the jugular, and cleaned all the ulcers with warm water, to which was added one part of the camphorated *Eau de Rabel*\* to eight parts of water. I also prescribed gargles made of a decoction of barley and the leaves of the

\* The *Eau de Rabel* is a favourite stimulant with the French veterinarians, and consists of five parts of sulphuric acid to twelve of alcohol.

bramble, which I acidulated with a little of the water of Rabel. Gruel, made with the farina of barley, constituted the only food.

"18th.—The aphthæ of the buccal membrane are almost all cured, but the ulceration of the tongue is very little better; nevertheless the edges of the ulcers are thinner and less callous. Continue the same applications to the mouth; but as the strength of the ox was failing under the poor diet that was allowed him, I ordered that he should have, in the course of the day, two messes of thick gruel, and that his ordinary drink should also be thickened.

"21st.—Very little alteration. I cast the patient, and bathed the whole of the vast ulcer on the tongue with caustic ammonia, which I applied to it by means of small pieces of lint tied to the end of a short stick. This dressing appeared to give a great deal of pain, and produced an abundant salivation, the appearance of which somewhat annoyed the proprietor.

"23d.—The patient exhibited a strong desire to eat, and we gave him some cabbage leaves.

"24th.—The ulcer on the tongue much diminished in size. That organ has been at length completely retracted into the mouth; the salivation is less abundant, and the cure rapidly advances.

"30th.—He eats and ruminates; but I allow him green food only, that I may not mechanically irritate the ulcer which still occupies the middle of the tongue as far as the frænum.

"Sept. 12th.—The cure was complete."

Our author now considers *the epizootic and enzootic aphthous inflammation of the mouth*, which is often sadly prevalent on the continent, but from which our country is comparatively exempt. It differs from the former in the livid and black appearance and malignant character of the ulcers, which are healed with difficulty—in the bad quality of the suppuration, and the fœtid odour which it exhales—and in the prostration of strength which the animal exhibits from the very commencement of the attack.

In many cases this disease yields to the treatment recommended for simple aphthæ; but, at other times, these ulcerations rapidly spread, they occupy the pharynx, the œsophagus, and even the abomasum. Then the case becomes serious. Deglutition is exceedingly difficult, and almost impossible, and this is one proof of the extent of the ulceration. The inflammation of the gastric and intestinal mucous coat occasions obstinate constipation, marked debility, and a small, concentrated, accelerated pulse. The breath is fœtid, and the urine in small quantity, and high-coloured.

In these cases he administers mucilaginous tisannes of peeled barley, mixed with honey—emollient injections—and supports the strength of the animal with milk in which eggs and starch have been beaten up. He uses gargles of vinegar and water, mixed with honey, and applies warm fomentations to the belly. If the



animal appears to suffer much intestinal pain, he gives him twelve or fifteen grains of opium dissolved in warm water, or else the liquid laudanum of Sydenham. He, nevertheless, loses many patients. In these fatal cases the prostration of strength and the loss of flesh are most rapid—a foetid odour is exhaled from the animal—the mouth is black and infectious, and blood mingled with infectious mucus is discharged from the anus. Bark and gentian are also indicated from the moment that this disease makes its appearance. These cases must not be confounded with the common glossanthrax, or blain—the existence of large vesicles along and under the tongue. That is an inflammatory disease, and requires the most active treatment. It plainly indicates bleeding, which would, in epidemic aphthæ, be attended by certain, and, perhaps, sudden death.

This disease is more prevalent in the autumn than at any other period of the year, and particularly in September and October; also when hot and dry weather suddenly succeeds to cold. Close foggy weather is too favourable to its development. The preservative measures are, to withdraw the animals from the influence of these causes—to move them from the low pastures—not to turn them out in the morning until the dew is off the ground, and they have eaten a little dry food. In beasts that are somewhat above their proper condition, a slight bleeding from the jugular might be useful, and white water, acidified by a little nitre or cream of tartar.

He has a peculiar mode of treatment for the patients which, at this time of the year, came under his care. If there was inflammation and intense redness of the mouth, with general turgescence of the lips and muzzle, he bled, gave gruel, emollient honied gargles, mild and wholesome food of easy digestion—as cabbages, potatoes, and bran—and, the case being taken in time, he usually effected a cure.

In a second variety, and in which the symptoms were more violent, and when the aphthæ were confluent and the ulcers deep, he, at first, endeavoured to calm the irritation by bleeding, fomentation, and a cooling regimen. He cauterized the ulcers with the *Eau de Rabel*, somewhat diminished in strength, and ordered them to be cleansed twice in the day with a decoction of barley acidulated and honied. After that he sustained the strength of the oxen and cows by the thickest gruel, and that of the horses by bread or thick gruel, and it was not often that he lost an animal.

In the third class, which included the oxen, calves, and young horses that were in a state of *cacochymatous* poverty, he had a more serious complaint to struggle with. Ulcers with a grey-coloured base, and which bled at the least touch, rapidly multiplied; the odour of the gangrenous ichor which ran from them was highly infectious, and the prostration of strength was rapid and complete.

In these cases, fortunately rare, he was enabled to save a few of the cattle and colts by the following means. After having cleaned and scraped them, he cauterized the aphthous ulcers with the concentrated *Eau de Rabel*, or, sometimes, with muriatic acid; for he wanted to prevent, at all risks, either the deglutition or the absorption of the purulent ichor from the ulcers. He then freely injected into the mouth a decoction of gentian,

sweetened with honey, and rendered acid by the *Eau de Rabel*. Internally he administered the red bark in powder, in doses of from four drachms to an ounce, with two or four ounces of acetate of ammonia, according to the age of the patient. These drinks were repeated twice in the day if the case was urgent. After two or three days, he sometimes saw the animal begin to revive, the mucous membranes to recover their natural colour, the ulcers to have a better aspect, and the pulse to be developed.

[To be continued.]

## CASE OF PHRENITIS—MAD STAGGERS—IN A HORSE.

[We met with this case in a sporting periodical—"Annals of Sporting"—which had considerable circulation fourteen years ago. It is a graphic sketch, and should not be lost.]

A HORSE of the light cart breed, fifteen hands high, had the appearance of having done much work; he was in a fair working condition, and quite blind. He had been employed several months in a mill at Mr. King's tin-factory, on Snowhill; and having evinced symptoms of ungovernable rage, the farrier was called in on Monday, the 11th of October. Thereupon it being judged advisable to remove the patient to the doctor's own stables, it was found expedient to employ, in this operation, the twitch for his nose, another for an ear, and thus, with a cradle for the neck, he was conducted to the stable of Mr. Beeson, a farrier, near Carthusian-street, Charterhouse; but this building being of wood (clinker-built), proved too feeble for his efforts, when the paroxysms returned, as is usual, with increased force. In fact, much stronger erections have been found of little avail in confining other horses afflicted in the like manner; and we have seen one of those edifices, yeleft a pound, stone constructed, after the fashion used in the lower parts of Northamptonshire and Oxon, two-thirds demolished by an infuriated horse of no unusual powers, save those derived from a disordered sensorium.

Mr. Beeson proceeded to reduce his patient by copious bleeding and the exhibition of a brisk cathartic; but the good to be hoped for rather than expected from this treatment (a more pacific disposition) was not in this instance realized, as too often happens. The poor animal went literally mad on hearing the footsteps of a gentleman's coach-horses, which were driven into the yard on the afternoon of Tuesday; and he broke down the front of his stable at a single thrust, committing many of those mad pranks which mark the highest state of excitability, and would be amusing to many beholders, if they were not sometimes personally dangerous, always destructive of property, and ever terminating in the death of the chief enactor in the scene. In horses so affected, a disposition to run at and injure other animals, not excepting mankind, by gnawing and tearing with the teeth, snatching at moveable objects

generally, and rearing up, so as to paw down whatever may happen to stand in the way, marks the mad and final career of such as retain proper vision to distinguish objects. Similar to hydrophobia in many respects, the mad-staggers has few corresponding symptoms in common with that communicative malady: the one, being an affection of the whole system, occasions frothing at the mouth, and furious but grovelling attacks upon dogs in particular, biting without rearing up or lashing out behind; the other is always marked by dulness about the eyes, with a little purulence, which is occasioned by a deranged brain, simply the effects of a disordered stomach, and the fumes thence arising, which affect the head by a sort of companionship that exists not only between these, but several other pair of parts in the entire system of animal life.

From the moment of breaking out of the stable, as before-mentioned, to his final exit, the particulars of his almost fantastic freaks were noticed by an observant tradesman of Barbican, whose shop the horse in question unaccountably avoided entering, when almost at the threshold. From this source we have derived the following authentic and corrected information, which we give to our readers, with the design as much to inform them of the distinguishing characteristics of two fatal disorders to which this main auxiliary of our field sports is liable, as it certainly is instructive and entertaining.

*To the Editor of "The Annals of Sporting."*

Sir,—An extraordinary case of madness in a horse, that was ultimately slain by me in this street, having been misrepresented in a few of its particulars, I feel some interest in its acquiring a more correct form in your very agreeable and useful miscellany. On Tuesday afternoon, about four o'clock, he bit and tore asunder the side wall next the door of the stable where he was confined, by prancing against it until he got into the yard. Here he met with Mr. Surgeon Spry's carriage, which stands in the yard adjoining, and, after having seized the foot-iron, leaped up behind. Upon this, the horses were safely got out and lodged in their proper stable, and the carriage drawn away from the enraged animal. He then made his way to Aldersgate-street, ran across the road, to the shop of Mr. Horley, haberdasher, and, as if he were blind, ran against and broke the glass. Immediately upon finding this obstruction, he reared up on his hind legs, bit and tore the sash, and took in his mouth a bundle of crape, which consists of twelve pieces tied together, and threw it into the street: making another bite, he caught hold of ribands innumerable, and shook them as every thing else, like a dog shaking a rat. He next bolted over to the shop of Mr. Thompson, draper, at the corner of Long-lane, and, thereupon coming in contract with the window, he reared up, and



smashed about six or eight panes of glass, with their wood-work, &c. Turning about, he next ran up Barbican. At the cooper's shop-door, he struck his head against the lintel-post, fell with the force of the blow; then took in his mouth a pail, and shook it, and also a mat, with several other things in the same way. He then trotted across the road, forwards and backwards irregularly, to my shop and others, falling and rising alternately, until he met with a one-horse chaise, of which vehicle he seized a wheel, and sprung up with his fore-foot behind it. The gentleman in the chaise, being aroused with the cry of "mad horse," leaned back, and whipped the enraged animal until he dropped off, and ran his head into the shop-window of Mr. Languire, tobacconist, smashing nine panes of glass. To the next door he then turned, Mr. Clarke's radical powder shop, broke seven panes, knocked his breakfast-powder about, and, ludicrously enough, threw one of the filled papers into the street. Then running across the street to Richardson's, his head met the gate-way post, and he fell backwards, wounding himself severely. Turning about, he met with the window of Mr. Daniel Beckett, corn-chandler, knocked out near a dozen of his panes, and, taking hold of a bag of rape-seed in his mouth, shook it like a terrier dog shaking a rat, though it might have measured a peck or more. About this time I observed a person with a sword in his hand, the wrong way uppermost, applying the hilt to the horse ineffectually. Hereupon I seized the sword from his hand, and, seeing the mad horse once more on his back lengthwise in the fall of the gutter, I thrust the sword into his off-side, near the lower rib; and, drawing it rapidly backward, his business was done for, when a butcher's man, armed with a knife, came up, and finished the poor creature's sufferings by cutting its throat.

STUDENTS WHO HAVE PASSED THEIR EXAMINATION AT THE  
ROYAL VETERINARY COLLEGE, LONDON.

*July 2, 1839.*

Mr. E. Higgs, London.  
Mr. J. R. Huntriss, Birmingham.  
Mr. H. W. Sparrow, London.  
Mr. M. Archer, Bungay, Suffolk.

*July 23.*

Mr. James Moon, Kingston-upon-Thames.  
Mr. M. M. Lucas, Liverpool.  
Mr. Richard Jones, Battersea.  
Mr. P. Prendergast, Waterford.  
Mr. J. Wright, Lynn, Norfolk.

THE  
VETERINARIAN.

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CASES OF RED-WATER, PUERPERAL FEVER, AND RUPTURE OF GASTROCNEMIUS EXTERNUS MUSCLE.

*By JOHN TOMBS, Esq., Pershore, late Bengal Artillery.*

I PROMISED to send to you some more cases of red-water in cattle. All those that I have witnessed since my last communication presented the same symptoms, and yielded to the same mode of treatment, therefore I thought it useless to trouble you with them; but, in order to confirm my declared opinion then as to the seat of the disease, I now send you the appearances of a case after death, proving beyond doubt that the primary and principal organs affected are the stomachs and liver, and more particularly the latter organ.

A new era now promises to dawn on veterinary science, viz. the communication of instruction on the diseases of horned cattle, &c., at the Veterinary College. Every student who intends to embark in country practice ought to feel grateful to the zealous and unwearied advocates of that noble improvement in the education of the pupil. It is absurd for a practitioner to expect to do well who is not perfectly competent to treat the several diseases to which almost all our domesticated animals are liable. The proprietors of stock are becoming more and more in the habit of invariably sending for veterinary surgeons to attend on all kinds of sick animals, never for a moment doubting that their professional education eminently qualifies them for that task; but a tale could have been told that would have sadly undeceived them. I am truly rejoiced that those palmy days of ignorance in regard to cattle knowledge have vanished.

I am, dear Sir,  
Your's very truly,

J. TOMBS.

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On the 6th of July, I was requested to attend a cow with the red-water, in this neighbourhood. I found her in a dangerous

state, and, as she was quite fat, recommended the owner to have her slaughtered, to which he immediately consented.

*Appearances on Dissection.*—The abomasum slightly inflamed; bowels healthy; kidneys healthy; bladder containing a large quantity of coffee-coloured fluid; spleen considerably enlarged; liver enormously swollen, and gorged with black blood; the pleura costalis injected with blood.

#### PUERPERAL FEVER.

*May 20th.*—I was summoned in haste to see a cow belonging to a grazier. She calved on the day before yesterday, and was turned out in cold storms. She was taken ill during last night, and was freely bled this morning. I saw her this afternoon, and found her down, and unable to move—lying at full length—moaning pitifully, and the eyes turned into the orbits—pulse 120, and almost imperceptible—and totally unconscious of surrounding objects. Her rumen was tremendously distended with gas; and, as life appeared to be fast ebbing, she was bled to death by the butcher, in my presence and at my suggestion: she lost six gallons of blood before the vital spark was extinct.

*Sectio Cadaveris.*—Lungs, stomachs, intestines, kidneys, and bladder healthy; but the whole lobe of the liver hepatized from some chronic affection. The vagina inflamed, and the uterus in a state of non-contraction.

#### RUPTURE OF THE GASTROCNEMIUS MUSCLE.

*Nov. 26th, 1836.*—A gentleman hunting with Lord Segrave's hounds, on Saturday the 26th ult., jumped his horse at a ditch which he did not clear with the near hind leg. The horse made a violent effort to extricate it, and after this pursued the chase with unabated cheerfulness, and when the sport was over walked home, a distance of eight miles, quite free from lameness.

*27th.*—Slight lameness was perceptible.

*28th.*—I was requested to attend him, which I did, and found him extremely lame, unable to sustain any weight on the near hind leg, and barely touching the ground with his toe. Respiration distressingly laborious—pulse 80. He refuses all food—drinks excessively—the tongue is covered with fur—he is continually catching his leg up, and is in dreadful pain—no swelling visible in any part of the limb.

I examined his foot very minutely, and found no alteration or injury there to account for the lameness. I bled him largely from the femoral vein, and gave him aloes and hyd. submur., and ordered gruel to be given plentifully.

*29th.*—Purging freely—pulse 108—in agonizing pain—con-



tinually catching his leg up. I cannot ascertain the precise seat of lameness. I extracted a thorn from the leg, but that could have nothing to do with the grievance. Tetanic symptoms are beginning to be manifest.

I took a gallon of blood from the neck, and he then began to swerve and perspire at the shoulder. The bleeding strangely and instantaneously relaxed the spasmodic affection of the muscular system, and the horse was enabled to put himself in a position to void his urine, which he had not done for two days. Foment the limb, and give opium and digitalis daily.

*Dec. 1st.*—Fever slightly abated. Pulse 70. Eats a little hay and carrots. I now perceive a swelling extending from the muscular part of the flexor tendons to the hock. The lameness is still extreme. Bleed from the femoral vein. Give drachm doses of aloes, tartar emetic and digitalis, and foment the limb frequently.

*5th.*—Pulse 60; lameness and pain as acute as ever. He cannot put his foot to the ground, and moves on three legs. I again opened the femoral vein, and divided the periosteum beneath a part of the swelling six inches in length, and inserted a seton over the swelling. Continually foment the limb, and give febrifuges.

*12th.*—Pulse 50. Fever abated—feeds better—can bear a little weight on the limb—seton discharges. Foment as before.

*19th.*—No fever—appetite good—swelling of thigh and hock diminished, but very hard. The lameness still very great, and which continued so until the middle of January, when it was deemed necessary to destroy the patient.

*Dissection.*—The fasciæ of the muscles of the thigh, generally, considerably thickened, the cellular tissue connecting together the flexor muscles likewise thickened. On separating the gastrocnemius externus from the flexor pedis perforans muscle, a quart of liquid blood, mixed with pus, escaped. The muscles were strongly united and blended together by tendinous fibres, and it was with great difficulty that I separated them: in the centre of the gastrocnemius externus muscle I discovered a great rent of a portion of its fibres, and a cavity which was filled with pus and coagulated blood. I observed spots of ecchymosis on various parts of the superficies of the muscles of the thigh. The synovia in the hock joint was of the consistence of glue.



## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

## THE BILE.

THE composition of the bile has engaged the attention of chemists from the middle of the 17th century. The ancients agreed in considering it to be a kind of soap, composed principally of soda and a peculiar resinous or oily matter. Fourcroy, relying on the experiments of his predecessors and his own, admitted these principles, to which he added a colouring, and an odorous, and an albuminous matter, and also several different salts. Thenard assigned to the bile of the ox the following constituents—resin, picromel, a yellow animal matter, soda, and divers salts. He obtained the same results after examining the bile of several other animals. Berzelius, on the contrary, pretends to have ascertained that the bile contains neither resin nor picromel. Independently of several salts existing in the blood, he admits of the presence of a biliary matter, a peculiar substance not azoted and bitter, but leaving behind it a sweetish taste, and which has the same relation as fibrine, the colouring matter, and the albumen of the blood, at the expense of which it is formed in the liver. The researches of Prout agree with those of Berzelius in the principal points. The results of those which have been made still more lately by Chevreul, Chevalier, and Lassaigne, on the composition of the bile in the human being, and the inferior animals, in some respects are similar, and, in others, quite contrary to those of Thenard. These philosophers have particularly dwelt on the presence of picromel, a substance which Orfila, Laugier, and Ceventon, have also found in the biliary calculi of men.

This difference of opinion, say Messrs. Tiedemann and Gmelin, renders it necessary to submit this fluid to a new analysis.

This analysis is instituted on the bile of the ox, the dog, and the human being. It will be sufficient to state the results with regard to the two first.

After all these experiments, say these excellent physiologists, we admit the following substances as the principal constituents of the bile of the ox :—

1. An odoriferous principle which is lost in the distillation.
2. The choline, or biliary fatty matter, or cholesterine.
3. The resinous biliary matter.
4. The biliary asparagine.
5. The picromel.

6. A colouring matter.
  7. A matter highly charged with azote, feebly soluble in water, insoluble in cold alcohol, but soluble in that which is warm.
  8. An animal matter (gliadine?) insoluble in cold water, but soluble in warm water.
  9. A matter (ozmazôme?) soluble in water and alcohol, and precipitated by the tincture of the gall-nut.
  10. A matter which exhales a resinous odour when it is heated.
  11. A matter soluble in water, insoluble in alcohol, and precipitated by acids (caseous matter, perhaps, with some salivary matter?).
  12. Mucus.
  13. Bi-carbonate of ammonia.
  - 14-20. Margarate, oléate, acétate, cholate, and bicarbonate, phosphate and sulphate of soda with a little potash.
  21. Chloruret of sodium.
  22. Phosphate of lime.
  23. Water occasionally to the extent 91.51 per cent.
- The bile of the dog contained the following substances :—
1. An odoriferous principle.
  2. Choline.
  3. Probably resin, but always in very small quantities. On this account it is precipitated in a very minute quantity by the acetate of lead.
  4. Picromel.
  5. A considerable quantity of colouring matter.
  6. A substance which is precipitated from a warm alcoholic solution, by the act of cooling (gliadine?).
  7. Some salivary matter, or what is analogous to it.
  8. Some mucus. It appears that the bile contains only a small quantity of this matter in solution, for we find no carbonate of soda, or at least a very small quantity.
  9. Probably some margarate and oleate of potash.
  10. Some acetate, phosphate and sulphate of soda, and chloruret of sodium.
  11. Some phosphate of lime.

#### THE ALTERATIONS WHICH THE FOOD UNDERGOES IN THE SMALL INTESTINES.

The aliment, dissolved by the gastric juice, enters the duodenum a little and a little at a time, in proportion as it is digested and converted into chyme. In all our experiments we have found the chyme to redden the tincture of turnsol. It stimulates the walls of the duodenum, and determines an abundant flow of bile from the gall-bladder, and from the biliary canals. In all the animals



which we have examined that have a gall-bladder, we have found this vessel almost empty during the process of digestion, and thoroughly filled when the animal was fasting. It is also probable that the pancreatic juice flows in a much greater quantity into the intestinal canal during digestion, than when the animal is fasting.

The chyle and the bile, which pour themselves into the duodenum, act on its mucous membrane as a stimulus to increase the secretion of the intestinal fluids, of the proper mucous fluid, and of the aqueous fluid of less consistence. The mucus presents itself under the form of large white or greyish white flocculi, which are incontestably the product of the secretion of the glands of Brunner and Peyer.

During digestion the peristaltic motion of the intestinal canal is quickened and strengthened. We have seen one part of the intestine shorten and close itself, while another part was distended and elongated. These movements are effected by the contractions and dilatations of the small intestines, in consequence of the irritation which the chyme and the bile poured into the canal produce upon it.

The contents of the duodenum and of the first portion of the small intestines are always acid. The acidity gradually diminishes in the second portion, and ordinarily disappears altogether at the extremity of this viscus. In general the acidity prevails in proportion as the food is difficult to digest. The free acid that is met with in the small intestines is chiefly the acetic acid. It is possible that a little free butyric acid may sometimes mingle with this. Hydrochloric acid is seldom met with in the small intestine, for ordinarily the filtered fluids of this organ yield by incineration an alkaline carbonate, a salt that could not have been formed if the hydrochloric acid had existed in any appreciable quantity.

The acid chyme which passes into the small intestine mingles with the bile, the pancreatic juice, and the fluids secreted as well by the mucous membrane as by the glands of the intestine. The bile, in virtue of the irritation which it exercises on the small intestines, at the same time increases the intestinal fluids, and accelerates the peristaltic motion. Mingling with the dissolved aliments, it imparts to them a yellow colour, which changes to various shades of brown before it reaches the rectum. Beside this, it produces the following changes in the chyme:—

1. The hydrochloric acid of the chyme, which is derived from the gastric juice, unites itself with the soda contained in the bile, or that alkali was hitherto combined with the carbonic and acetic acids. The disengaged carbonic acid, of which, in truth, the quantity ought to be very small, is probably one of the causes which produce the minute bubbles of gas that are almost

always found in the small intestines. It is, nevertheless, possible that a portion of these bubbles may proceed from the decomposition of the food. If the chyle contains little or even no hydrochloric acid, but only free acetic acid, this will equally transform the carbonate of soda of the bile into an acid. In fact, the mixture of the chyle and the bile will always contain some free acid, but generally that will be acetic acid without hydrochloric acid, because this last will precipitate the albumen of the pancreatic juice.

2. The free acid of the chyme precipitates the mucus of the bile in the state of a coagulum. This last draws with it a great part of the colouring principle of the bile, for the precipitated mucus has a brown colour. The cholesterine is also precipitated, since we have often obtained a certain quantity of this substance when treating with alcohol the insoluble portion of the matter contained in the small intestine.

The margaric acid, which we have found in the intestinal canal, proceeds probably from the bile, and it had been separated from the carbonate of soda of this fluid by the hydrochloric acid. As we ordinarily extract from a portion of the insoluble contents of this water a resin which possesses the same properties as the biliary resin, we do not hesitate to consider it as such, and to think that it contributes to the formation of the excrement. We have found it in a state of solution when the fluid of the inferior portion of the small intestine was alkaline, as in a horse that had fasted before it was killed. It is totally or in a great part rejected with the excrement, and it appears to be a substance of which the intestines hasten to free themselves.

The colouring principle is not entirely precipitated, as is proved by the yellow or brown colour which the fluids obtained by the filtration of the contents of the small intestine always exhibit. It does not appear, however, to be absorbed in that state of solution, for the colour of the filtered fluids becomes deeper in proportion as the contents of the intestine descend in the canal. It is, then, like the resin, expelled entirely with the excrement, in part combined with the intestinal mucus, and in part in a fluid form.

Physiologists generally assert that the mixture of the acid chyme with the bile determines the separation of the chyle, and its precipitation under the form of flocculi. This hypothesis, however, is certainly false. The circumstance alone of the absorption of the chyle which demands that it shall be fluid, renders it altogether improbable that it can be separated in flocculi, that is to say, under another form than that of a liquid, and in the very place where the absorption is effected. Besides, the experiments which we have made on the mixture of the fluid contained in the stomachs with bile, both when cold and at a moderate heat, and in

which we have only seen precipitates formed similar to those which have taken place when an acid was poured into the bile, all these things combat this opinion in the most decisive manner. The pretended flocculi of chyle which are met with in the small intestines, are, according to our observation, nothing but collections of mucus, which, when the animal has been feeding, are reduced to a white fluid in consequence of the absorption of the liquid chyle. The intestinal canal cannot retain the chyle in its natural state. The chyle is the portion of fluid contained in the small intestine which the lymphatic vessels absorb.

The pancreatic juice, containing a great quantity of albumen, a matter analogous to caseine, and another which has the property of being reddened by chlorine, contributes probably to the assimilation of the chyme in the small intestines, by means of its principal constituents, which contain a great deal of azote, mingling with the chyme, and being absorbed with the portion of it that is rendered completely fluid. Besides, we have already seen that the contents of the small intestine, in proportion as they travel along that canal, contain less and less of albumen, of the matter analogous to caseine, and of that which is capable of being reddened by chlorine. This is an evident proof that these matters are absorbed with the fluidified portion of the aliment.

It may be still farther alleged as a circumstance favourable to the opinion according to which the pancreatic juice assists in the assimilation of the alimentary substances, that the pancreas is much larger in animals that live on vegetables than in those that are nourished by animal food; and, if we may form any conclusion from its comparative size, much more fluid would be secreted from the first than from the second. Daubenton has made an observation, which deserves some thought, on the difference in the size of the pancreas in the wild and domestic cat. In the latter, who feeds on vegetable as well as animal substances, the gland is much larger than in the other, who lives entirely on animal food, notwithstanding that, in general bulk, the wild cat considerably surpasses the domesticated one.

As to the fluid secreted by the mucous membrane of the small intestine and its glands, composed of flocculent and of ropy mucus with a watery fluid, and of which the secretion is so abundant during the flowing of the chyme, we may, perhaps, attribute to it the following offices:—

1. It facilitates the passage of the alimentary *boiullie* during the peristaltic motion of the small intestine, by rendering the chyme more liquid, and by moistening and lubricating the internal surface of the intestine. It also aids the progress of the dissolved aliment.



2. The intestinal mucus, which has the property of dissolving water and other fluids, serves, by this means, as a kind of intermediate agent between the dissolved aliment, the pancreatic juice, and the bile. It is on this account that it is more fluid, and more prominent during digestion, and when the animal is fasting, at which time it has a much greater consistence.

3. As this mucus covers the intestinal villousities, it is probably also the medium through which absorption takes place in the small intestine.

4. The liquid portion of the intestinal fluid appears to exercise a solvent action on the portions of aliment which have passed into the small intestine with the chyle, and which the stomach has not completely dissolved. It should be borne in mind, in reference to this, that these residual portions become gradually smaller as they pass along the canal, and that, at length, they altogether disappear.

5. Finally, the aqueous portions of the intestinal fluid, and, principally, the animal matters which they contain, are absorbed with the dissolved portions of the food, by the mucous membrane of the small intestines, and by the lymphatic vessels: thence it results that the mucus acquires greater consistence in proportion as it advances towards the cæcum. The combination of the intestinal fluid with the dissolved aliment determines the assimilation of the latter. It might also be alleged in confirmation of the assimilative action of this fluid, that the length of the intestinal canal, and the number of glands that are scattered over its parietes, have a perfect and beautiful relation in the different families of the mammalia to the nature of the aliments on which they live. The small intestine is very short in the carnivora; it is longer in those who live upon fruits, and sweet and farinaceous roots, oleaginous grains, and tender herbs; and it is longest of all in those whose food consists of the harder grasses and leaves.

The mixture of the chyme, the intestinal aqueous fluid, the intestinal mucus, the bile, and the pancreatic juice, acquire more and more consistence as it advances through the intestine, by means of the contractions of the muscular coat. The fluid portions, and those expressed from the general mixture, are attracted by the mucous membrane, which imbibes them almost like a sponge, and the numerous lymphatic vessels of which effect their absorption. The intestinal mucus becomes more consistent, and mingled with the remnants of the undissolved aliment, particularly with those that are not soluble in the digestive fluids, as unbruised oats, the hard fibres of plants and of wood, hair and feathers, much of the fatty matter: the resin, the colouring principle, and the mucus of the bile, constitute the commencement and the foundation of the excrementitious *bouillie*, and this does not begin to assume a decided

character until it has passed through two-thirds of the small intestine.

This intestine can only accomplish its peristaltic motion and all its secretions while it constitutes a part of the living frame; and its functions, like those of the stomach, are under the controul of the respiratory, circulatory, and nervous influence.

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### NECROSIS OF THE OCCIPUT, FOLLOWED BY INCOMPLETE PARAPLEGIA AND EPILEPSY.

*By Mr. ROBERT READ, Crediton, Devon.*

A BAY horse, nine years old, belonging to S. Brown, Esq., having an abscess of the poll for several months, was seized with a partial incapability of moving his hind legs. In a staggering manner with some difficulty he was led to my infirmary. On the following morning he could move rather better with the hind legs; but the fore extremities were now implicated, and any act in moving produced convulsive twitchings and spasmodic rigidity of the muscles of the neck, shoulder, lips, &c. with retraction of the eyes and protrusion of the haw.

The general excitement was very great. Any sudden noise would bring on convulsions of an epileptic character, viz. violent spasmodic muscular action, until he fell on his side, and then all four legs would be as stiff as so many posts. Sometimes one, and at other times all the legs had rapid convulsive movements. There would be foaming at the mouth and grinding of the teeth, eyes retracted in their orbits, eyelids partially closed. This fit would last about ten minutes, and then the horse would scramble up and begin to eat. The paralysis and fits continued from the 23d to the 27th of May, when he died in a convulsive paroxysm.

*Treatment.*—As the pupil was dilated, and vision rather imperfect, pulse full, slow, and moderately hard, I bled and gave a purgative of aloes and croton, which acted well. I also gave half a drachm of prussic acid in a pint of cold water, every four hours, which he freely drank. No relief was obtained, nor were the convulsive struggles lessened.

*Post-mortem appearances.*—I expected from the symptoms, that there was effusion on the cerebellum; but on taking off the skin covering the occiput, a sanious discharge escaped, exposing a piece of detached bone, the cavity around being in a state of necrosis. A small sinus extended into the investment of the skull, with a serous effusion, and a little pus on the cerebellum and spinal marrow. The tunics were slightly congested.

I have sent you a portion of the diseased occiput, as nothing affords me so much pleasure as corroborative proof, when circumstances will admit, in all my communications to the best of veterinary works, THE VETERINARIAN.

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The portion of bone which Mr. Read has kindly sent, was the occipital ridge. The whole of it is in a complete state of caries. I am not aware that we have a similar case in any of our records, nor would it have admitted either of cure or palliation. There was no interposition of sound bone between the diseased part and the cranial cavity.

I have presented the bone to the Royal Veterinary College.

Y.

In a work that deserves a place even in the library of the veterinary surgeon, there is a history of caries of the occipital bone in the human being. Singular pains of the head occurred periodically, accompanied by imperfect speech—fixed eyes, dilated pupils, and paralysis of the muscles of the right side of the face, and gradually extending over the whole of the right side of the body. The dura mater and arachnoid membrane were sound—the lateral ventricles contained four ounces of limpid serosity—the cerebellum, a little within its external surface, assumed an increasing degree of hardness, and, towards the centre, was almost cartilaginous. The cause of the caries of the occipital bone was not known.

*Lallemand sur l'Encéphale*, tome iii, 402.

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## CONSULTATIONS.

### No. X.

#### URINARY OR INTESTINAL DISEASE.

My dear Sir,—I FEEL some difficulty as to the management of a protracted case, and, presuming on the kindness you have always evinced towards me, I write to you for advice.

A mare was attended by a farrier six weeks, during which time anodynes, aperients, bleedings, and copious enemata, were had recourse to, for what *he* thought was *colic*. The symptoms were spasms returning about once in every week. As no progress had been made, I was requested to see the patient. On entering the stable, I was struck with her anxious eye, bowed back, and erect tail. On examination, I found the membrane lining the vagina considerably inflamed—great tenderness over the region of the



right kidney, and the pulse 40 and full. The first impression on my mind, and which still remains, was that it was an affection of the kidney, but to what extent it existed, or what mischief it had done, I could not at once determine. I ordered half an ounce of the carbonate of potash, with two drachms of powdered gentian, to be given in a ball morning and night, and the clear liquor of a decoction of linseed to be given morning and night.

This was continued a fortnight with no good effect; I therefore determined to analyse her urine, and found in it a great redundancy of alkaline matter, rapidly decomposed by nitric acid.

I wished now to have her more immediately under my care, and proposed that she should be sent to our establishment. She came, and I changed her medicine, and gave her two drachms of nitric acid, with three ounces of linseed meal, and a quart of cold water, every day.

She was apparently easier during four days, when every bad symptom returned with increased violence. She threw herself suddenly down, rolling over and over, then lying on her back for awhile, and, after that, getting up apparently easy and feeding as placidly as ever. Her pulse varied from 70, and bounding to 36, and placid.

I then—being urged so to do—gave her powerful diuretics, as half an ounce of nitre twice in the day, for two days, and then two ounces of turpentine with mucilage, daily, for the next two days: but these medicaments, as I had prognosticated, rendered her sufferings more acute; I therefore subtracted ten pounds of blood, and gave her six drachms of Barbadoes aloes; after this, I gave her half-drachm doses of opium in solution. This acted little or not at all as a palliative; or, if it did, it was to make her rest as much as she could, by sitting on her haunches like a dog.

(Another veterinary surgeon was now summoned in consultation; but, after the deepest consideration, we were not disposed to make any alteration in the treatment.)

I several times removed her water with a catheter, and subjected it to the most careful examination; and I minutely examined, so far as I could, *per rectum*, the corrugations of the bladder, but I could not detect the slightest calculus, nor any thing to account for the singular symptoms which she exhibits. There are certainly some appearances of œstrum; but this will not satisfactorily account for the state of the vagina, or the irritability of the bladder. She does not waste so much as might be expected, and her age is about ten.

The recollection of many an instance of kindness emboldens, &c.  
W. R.

## REPLY.

Do not the symptoms which you relate—the occasional colicky pains—the violence with which the mare throws herself down, and rolls over and over—her lying on her back, and sometimes sitting on her haunches like a dog; do not these symptoms induce you to look to the intestines more than the urinary organs, and lead you to expect the existence of intestinal calculi—the urinary organs sympathizing with the irritation of the neighbouring viscera? If this diagnosis is correct, I fear that you have little chance of saving your patient.

Of what is this calculus composed? Principally of stercoraceous matter; but almost always containing some carbonaceous matter, and frequently a portion of magnesia. How can you dissolve this stercoraceous, carbonaceous, magnesian accumulation? You do well in continuing the exhibition of your mucilage, and the infusion or decoction of linseed. Oleaginous drinks, linseed oil, olive oil, and, perhaps, occasionally, small quantities of opium, might be adjuvants not altogether worthless. But, then, the concretion! the source of the evil!! how shall we attack that?

My first attention would be directed to the tartaric acid, and in combination with potash and antimony, and in doses of a half-drachm three times in the day; and this gradually increased to three-fourths of a drachm. If the symptoms were not relieved, I should, perhaps, alternate this with small doses of diluted sulphuric acid.

Of the effect of the former of these agents I can speak from experience. I can recollect three cases in which the patient appeared to owe his life to the exhibition of emetic tartar. Try it. You cannot do harm. Let me know a week or two hence how you are going on.

## REJOINDER.

I have suffered so long time—three weeks—to pass without writing, because our patient exhibited so many symptoms of improvement. Before we commenced the exhibition of the potassio-tartrate of antimony, we administered an enema, consisting of 6 oz. of the sulphate of magnesia, dissolved in  $2\frac{1}{2}$  gallons of water at  $120^{\circ}$  Fah. To this succeeded another enema, composed of a quart of cold thick gruel, and containing a drachm of opium. From these she experienced very great relief. I then gave her, in the form of a ball, three times every day, half a drachm of the potassio-tartrate of antimony, with ten grains of powdered opium. This I continued seven days, with the liberal use of linseed; but, as her

bowels were in a healthy state, I did not give her any linseed oil. The paroxysms of pain have returned only once since I began the treatment recommended by you, and that was of short duration. She has returned to her work, usually hard draught-work, and sometimes she has been ridden. In no instance did she appear to suffer any inconvenience.

In endeavouring to satisfy myself as to the difference between your suggestion and the conclusion to which I and some veterinary friends had arrived, I confess that I do not see my way very clearly. There was a great quantity of carbonaceous matter present in her urine, which rapidly effervesced with the muriatic, nitric, and sulphuric acids. Great pain was exhibited when the right lumbar region was pressed upon, and also when there was pressure *per rectum*, on the kidney on the same side. The membranes lining the bladder and vagina were highly inflamed, and the urine was occasionally withheld for the space of twenty-four hours. These were grounds, and, we thought, very reasonable ones, on which we founded our opinion as to the presence of a calculus in the pelvis of the right kidney.

On the other hand, there seemed to be a total absence of the concomitant symptoms of intestinal calculi, or an intestinal calculus, excepting the occasional pains which she suffered; for her bowels readily responded to a dose of four drachms of aloes in two instances: her evacuations always had a healthy appearance, and at no time did we particularly notice any unusual detention or inordinate evacuation of fæces. The appetite was only impaired when she was actually suffering pain.

She now voids a considerable quantity of comparatively clear urine, and we can no longer trace the peculiar character of the urine which was at first exhibited.

As this case was one of considerable interest from its duration, and apparent unyielding character, and, afterwards, from the rapid restoration of the patient, has not the public some claim upon it? or, might not a short statement of it possibly elicit the publication of other analogous cases?

Faithfully your's,

W. R.

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[The case is thus laid before the veterinary public, and, any remarks on it, or "the publication of analogous cases," would be thankfully received. A case very much resembling the present one was lately in the hospital of the Royal Veterinary College. Mr. Sewell considered it as one of chronic enteritis. Professor Spooner, we believe, will give us some account of it.—Y.]



## THE PRESENTATION OF A SERVICE OF PLATE TO MR. YOUATT.

DURING the last month, one of those pleasing events took place, which, whether in the history of an individual, or of the profession of which he is a member, is delightful to contemplate, for it is as highly gratifying to the one as it is honourable to the other; an event to which the memory will often revert, and the circumstances connected with which cannot be effaced from it by any lapse of time.

Many of the members of the veterinary profession had long expressed a wish that a TESTIMONIAL should be presented to Mr. Youatt expressive of the estimation in which they held him, and the high opinion they entertained of his unwearied and meritorious exertions in veterinary science.

A meeting of several of the Gentlemen who were favourable to this was held at the Freemasons' Tavern, on Monday, April 5, 1839,

Mr. JAMES TURNER in the Chair;

when it was unanimously resolved,

“That this Meeting, reviewing the long, unwearied, and successful exertions of Mr. YOUATT to advance the best interests of the Veterinary Profession, begs to return him its warmest thanks; and, considering the services which he has rendered to the Profession by conducting so ably, and for so many years, *THE VETERINARIAN*, and at the same time contributing by various other works to veterinary literature, at the sacrifice of those emoluments which attend the ordinary duties of his profession, pursued with an equal degree of zeal, it is deeply impressed with the propriety and justice of presenting him with that which may be deemed both an honorarium, and, in a slight degree, a recompense for his invaluable labours.”

Circulars embodying the above resolution were addressed to the members of the veterinary profession, and the most sanguine expectations of those who had ventured to take the more active part were speedily and fully realized. The ready response given enabled them, confidently and with feelings of gratification, to consult the wishes of him whom they were desirous of honouring.

After some little thought, Mr. Youatt selected a SILVER DINNER SERVICE, “in order that,” to use his own words, “he might sometimes lure to his humble board a few of those with whom he had been so long identified, and whom he so cordially esteemed, and the remembrance of former days might be delightfully renewed; and also that the Testimonial from a profession which he so much loved might be transmitted to, and proudly cherished by, those whom he might leave behind him.”

His wishes were complied with; for how could that which bespoke feelings worthy of the man be refused?

The presentation of the Testimonial took place at the Freemasons' Tavern, on the 14th ult.

The fitting time having at length arrived, the necessary arrange-

ments were entered upon, and the Testimonial was presented. The company was not numerous, but there were those present who had known Mr. Youatt for many a year; whose acquaintance with him had gradually ripened into friendship, who had watched his zeal for the onward progress of the profession, and the more they knew of him, the more they saw cause to admire him. He had long stood foremost, and occasionally almost alone, in the contest for the advance of veterinary science. The storm of conflicting opinions had raged around, but he was firm and undismayed. Like the knotted oak of his native soil, the blasts which passed over him only served to confirm him in every good purpose, and root him more firmly in the affections of his friends. His were

“ The still and mental parts,—  
That do contrive how many hands shall strike,  
When fitness calls them on.”

Mr. Percivall was to have presided, but domestic affliction prevented him; the Chair was therefore filled by Mr. Turner, who was supported on his right and left by Mr. Youatt, Professors Dick and Spooner, Messrs. Braby, Cheesman, Daws, Dickins, Easton, J. Field, W. Field, Henderson, King, jun., Marshall, Mayer, sen., Silvester, Simonds, Wardle, Woodger, many gentlemen not members of the veterinary profession, and the Secretary. An excellent dinner was served up in Mr. Cuff's best style, after which several ladies were introduced, for whom a platform had been raised. The national toasts having been drunk with all due honours, and the Dinner Service placed opposite to Mr. Youatt,

Mr. Field arose, and thus addressed the meeting:—

Mr. Chairman, and Gentlemen,—It has been, I think, correctly affirmed, that the progress of a science is in proportion to the advancement of its literature, whether we regard the latter as the parent or the offspring of the science itself.

In the advanced state of an art, the collective labours, the unasked contributions of the valuable records of its members, are the never-failing source of an ample supply of information; but, in the earlier period, or as it may be termed, the boyhood of an art, the supply does not flow so abundantly; and hence the labours of him who has undertaken the onerous duties of an editor become wonderfully, I may say fearfully, increased.

Although a few works of considerable merit had, from time to time, appeared, treating more particularly of the structure and functions of parts, and only generally of disease, there still was wanting some work which should be the vehicle of more precise, particular, and practical information in pathology; and it was not until the year 1828, when the first volume of *THE VETERINARIAN* appeared, that this desideratum was supplied; and all who felt anxiously for the amelioration of the veterinary art pronounced it one of the most important steps to advancement that had been taken

since the establishment of the Veterinary College. The continuance of THE VETERINARIAN was doubted by many, and some even declared that the Editor would not be able to obtain the requisite supply of information,—that his own efforts, however great, would fail, and that in a short time its publication would be discontinued: but they who knew the zeal of him who had undertaken the task, his assiduity, his untiring perseverance, not only dared to hope, but had confidence, and the result has proved that this confidence was not misplaced; for this periodical, the first established Veterinary Journal in England, having grown into strength, and being based on the good opinion of the members of the profession, collects and diffuses most valuable information on a far greater variety of topics than could by possibility have been obtained from individual works for many years to come.

But the Editor has yet other claims to your high respect. Need I refer to his constant endeavours to establish Veterinary Societies, those schools for the mutual instruction of practitioners; to his own unassisted contributions to the literature of his profession, by works on the Horse, on Cattle, and on Sheep, by which the horseman and agriculturist are indissolubly bound to the instructed veterinarian. Shall I call to your recollection his researches and communications on Rabies; or, more recently, his work on Humanity, which entitles him to the good opinion of all men.

These meritorious and successful exertions in our cause have produced but one feeling among the members of the veterinary profession, and from the three kingdoms they have simultaneously declared that this was the time to render tribute to whom tribute was due. And we, a small portion of the subscribers, do, in the name of our professional brethren and ourselves, present to you, Mr. William Youatt, this Service of Plate, in token of the high opinion we entertain of your literary labours in veterinary science; and we sincerely hope that you may long live to enjoy it in the bosom of your family; and we trust that Providence will superadd the blessings of health and the full enjoyment of your faculties, that you may still be enabled to continue to promote the advancement of our art.

The Tureen bore the following inscription:—

*THIS SERVICE OF PLATE WAS PRESENTED*

*BY THE*

*Veterinary Profession*

*TO*

*WILLIAM YOUATT, ESQ.*

*A. D. 1839,*

*In testimony of the high esteem they entertain of his Literary Labours in  
Veterinary Science.*



Mr. Youatt replied. I will not (said he) insult you, nor the cause which has brought us together to-night, by any of those hackneyed professions of inability and unworthiness which have been occasionally repeated, *usque ad nauseam*. The cause of veterinary science is worthy of our devotion to it, and he who is now addressing you deserves some portion of your regard, or he would not exultingly, yet every faculty overpowered, now stand before you. Believe him that he never dreamed that you would so highly estimate his humble labours—or that the choicest and the best of our profession, and in every part of the United Kingdoms, would contribute to the presentation of such a testimonial of regard and esteem. He would be more or less than man if he did not feel your kindness,—if his old heart did not beat again with some of its pristine force, and glow with the ardour and the gratitude of which it could be conscious in by-gone days.

Your are pleased, Gentlemen, to connect this splendid Testimonial with my “literary labours in veterinary science.” Although I confess that I was early attached to literary pursuits, and gave to them many a leisure hour that ought, perhaps, to have been otherwise employed, and, under a feigned signature, added one or two works to our stock of general literature, which were not unfavourably received, but which I am pledged not yet to acknowledge, I did not forget the profession to which I had devoted myself, and some hours were daily, perhaps I may more properly say nightly, spent in the patient accumulation and recording of facts; but, during nearly sixteen years from my entrance at the Veterinary College, I think I can truly say, that I never once thought of becoming a veterinary writer.

Why was this? Because entering into partnership with one whose name will ever be connected with the history of the early improvement of the veterinary profession—I refer to Mr. Blaine—I never so far forgot myself as to think of successfully rivalling him, or, if I had vainly and foolishly encouraged for a moment such an idea, the deep impression of the dishonour that would have been linked with such an attempt would have checked me in my foolish career. Identifying myself with his cause in the early part of my attendance at the College, and almost daily fighting his battles in an institution at which he was undervalued and maligned, I had subjected myself to a series of persecution which somewhat abated the ardour of my private studies, and, I thought, would never have permitted me to appear on a public arena. In addition to all this, the personal experience which I had had of the mode in which the education of the veterinary pupil was conducted—the systematic delusion which was practised, in order to arrest the progress of improvement, and to prevent the profession to which I had attached myself from assuming its proper rank among the sciences—the studied encouragement which was given to the groom and to the farrier’s son, and the sneer and the cold rebuke with which the attainments of the educated pupil were regarded and repudiated—the plain and palpable effort to widen and to deepen the chasm between the practitioner of human and veterinary surgery—when I beheld all this, I was astounded and disgusted. That sentence still rings in my ears, for it was rarely omitted in the introductory lecture, “We must look to the sons of grooms and farriers for practical veterinarians.” But I refrain. The chief mover in those scenes is no longer among us. *Sit illi terra levis!*

I looked at the works of our few veterinary authors. James Clarke had passed away, but I read his publications on the general management of the horse, and on shoeing, with pleasure, and with much profit too. There was a straightforwardness about him which I could understand and appreciate.

That Professor Coleman’s work on the Foot of the Horse formed a part of my little library, you may be well assured. The beauty and the accuracy of

the engravings were duly estimated by me; but I could not reconcile myself to the author's share of the work. It was not worthy of his subject, and I had met with the greater part of it elsewhere.

Mr. R. Lawrence—some of his sketches of the defects of the horse were in a stile which Bunbury could scarcely excel. Every page bore the stamp of talent, but it bore likewise the marks of haste and of idleness.

Mr. Bracy Clark had published several works, and I gave him much credit for talent and originality: but there was a spirit of dictation and assumption prevailing in many of his productions which destroyed much of the pleasure that would otherwise have attended their perusal, and very materially limited the number of his readers.

Mr. White's work had reached the third or the fourth volume. His symptomatology was truly valuable, and every day's experience confirmed the accuracy of his observations; but his medicine belonged to human and not to veterinary pharmacy.

I have already given my warm and sincere testimony to the worth of Mr. Blaine's *Veterinary Outlines*, and the increasing value of every edition.

I hasten to the mention of other works more immediately connected with the commencement of *THE VETERINARIAN*.

In 1820 Mr. Goodwin's work on the *Shoeing of the Horse* made its appearance. There was no undue presumption, no shallow pretence here. It was the work of a practical and a scientific man; it deserved, and it had, my honest study: but I happened accidentally to discover, that, notwithstanding the good and sterling matter which this work contained, and the useful plates by which it was illustrated, it took more than three years to dispose of the first edition of it, and then, the share of the profit of the author was not more than the majority of practitioners pocket for one fortnight's work. You may suppose what were my feelings respecting veterinary readers, and the remuneration of veterinary authors.

In 1823, 24, and 26, appeared Mr. W. Percivall's "*Lectures on the Veterinary Art*;" a work distinguished by the singular and undeviating accuracy of its statements, and the peculiar simplicity and force of its reasoning. It commenced a new era in veterinary literature. It is true that, sixteen years after the publication of the first volume, a complete copy of the work could not be purchased at much less than double its original price; and it is now esteemed by the profession, as it ought from the commencement to have been: but the fact, the disgraceful fact is, that it required sixteen years to exhaust one edition of this excellent publication. Could we require a more striking, a more lamentable proof of the non-literary character of the profession at that time? The work, by the same author, which after an interval of ten years succeeded to the *Lectures*,—"The *Hippo-pathology*, or a *Systematic Treatise on the Diseases and Lamenesses of the Horse*,"—is, if possible, still more worthy of the author. He follows no plan of instruction adopted by others. He has cast off the trammels of the school in which he was educated; and in language still more clear and appropriate and classical than the former, he disencumbers his subject of every difficulty, while the perusal of his work is more a pleasing relaxation than a severe study. But I must not wander even on a topic so delightful as this. Nor must I, going back again to the period when we had no periodical, speak of the valuable and accurate instructions of Osmer—the cumbersome, and occasionally incorrect, statements of Boardman—the truly beautiful plates of Freeman—the simple, classical, argumentative instructions of the unfortunate Peall, and to whom we were indebted for the greatest boon ever conferred on our profession, although that honour was claimed by another, the elevation of the veterinary surgeon to the rank of a commissioned officer—the diminutive work of Moorcroft, yet full of im-

portant matter—the more cumbrous one of Feron, somewhat too loosely written, yet containing no inconsiderable portion of valuable matter—the hastily compiled Pathology of Ryding—the marvellous accounts of Mr. Wilkinson's encounter with and victory over Tetanus. These works comprised the literature of our art. They were all of them by turns my companions; but I communed oftenest, and most pleasantly, and, I could begin to find, most profitably, with the Lectures of Mr. Percivall. I had not the honour of his personal acquaintance then: but as volume followed volume, and each exceeded its predecessor in beauty of style, and in professional value, I began occasionally to look about me for some unoccupied, some inferior portion of our art, where I too might labour, and, possibly, not altogether fruitlessly, in this noble cause.

In 1824, Girard, jun., the pride of the veterinary profession in France, in connexion with Royer-Collard, a physician of eminence in Paris, commenced the first French Veterinary Periodical, "*Recueil de Médecine Vétérinaire*." When I say the first veterinary periodical of France, I perhaps should except the "*Instructions et Observations sur les Maladies des Animaux Domestiques*," by Chabert, Flandrin, and Huzard. These appeared annually, from 1790 to 1795. The effect of Girard's periodical was electrical in France. His journal soon began to be filled with essays of sterling value. Soon the names of Vatel, Yvart, Grogner, Rainard, and Moiroud, were added to his; and in the beginning of 1826 a rival journal was started, under the editorship of Dupuy and Vatel.

I was not an inattentive observer of this; and at the close of 1827, I had determined, although known to but few of my veterinary brethren, to try how a veterinary journal would do in England; but it soon became known to me that Mr. W. Percivall and Mr. Bracy Clark had formed the same determination. I should not have stood the slightest chance against either of those gentlemen, and I exercised the part of discretion, and withdrew.

THE VETERINARIAN appeared. The literary attainments, the scientific acquirements, and the high spirit of William Percivall were sufficiently evidenced in the first number; and there was a presiding spirit influencing and giving its proper tone and character to such a work—his father John Percivall,—a man cast in Nature's noblest mould. I ventured to send a contribution to the first number. It was my first appearance as a veterinary writer, and it gave a new tone and colour to my thoughts and pursuits. It was kindly received by Mr. Percivall. It was in company with a paper by that justly esteemed and sterling friend to his profession, Mr. King, sen., and a valuable paper from a correspondent who concealed himself under the signature of Z, and whose name we never could discover; these three, short papers all of them, constituted the whole of the assistance which Mr. Percivall received in his first number. With his wonted courtesy he favoured me with a call, and then commenced a friendship which was the pride of my future life, and which will cease only with death.

February came, and there was one contribution from me, but every sentence beside emanated from the pen of the Editor. There was, however, one addition, and an invaluable one, the commencement of Mr. Percivall's "*Anatomy of the Horse*." I must not say that this noble work owes its existence to THE VETERINARIAN, but, at least, there it began to appear. We now frequently met, and serious, and not of the most pleasant character, were our communings. I was afraid that he would have retired with disgust, but at one of our meetings he offered, what I had not dared to ask, to receive me as a coadjutor. You may suppose with what pleasure and determination to discharge my duty this offer was accepted.

Mr. Percivall, from the very commencement of THE VETERINARIAN, had



not confined his communications and his extracts to the diseases of that animal on which alone the Veterinary College had deigned to bestow its attention. The very first number contained an extract from the French on Hydatids in the Brain and Spinal Marrow of Sheep, and a communication on the Artificial Increase of Milk in Cows. The second number contained some valuable remarks on the Diseases of the Hoofs in Sheep, and on Hoven in Cattle and Sheep. The new editor therefore, who had been bred in the school of general medicine, and taught to regard every domesticated animal as an occasional patient, had little more to do than to follow out, somewhat more extensively, the right and liberal system on which his compeer had started. Perhaps the diseases of cattle and sheep were made somewhat more prominent objects than they otherwise would have been, and the foundation was laid for that noble and vast improvement in the pathology of the inferior animals which the last twelve years have witnessed.

To return from this long digression. March arrived, and Mr. Charles Percivall gave us a paper on that strangely misunderstood disease, that supposed product of rheumatism or cramp, Dislocation of the Patella, and to this he added the removal of another delusion, the existence of filariæ in the eye of the horse, as connected with Kumree. These were papers of sterling value, and we prized them: but beside two short anonymous contributions, they were all that we had.

The Journal for April appeared without a single communication. Mr. Percivall was disgusted at the strange and disgraceful apathy of his veterinary brethren, and he retired from the concern. He urged me to do the same. He said, and very properly, that there was no reason that we should sacrifice our time and our money for a profession that seemed utterly reckless about us: but I, perhaps, had a little too much of the perverse doggedness of some foolish people about me, and I told him that I would try it out.

May came, and there was not a contribution. The continuance of my friend's "Anatomy of the Horse," and which he had promised not to withdraw, was the only assistance which I had in the composition or compilation of that number. And now what did Mr. Percivall do? He comes to me, and he says, "And so you will be thus absurdly obstinate?" "Yes! I will; and I can only say in the language of the Kentuckian, 'If you think to turn me, you may as well row up the Falls of Niagara in a fish-kettle, with a crowbar for an oar.'" "You are a strange fellow," said he: "and now I will tell you what *I* will do. You united yourself to *THE VETERINARIAN* when it was almost in as bad a state as it is now, and I won't desert you. We will fight it out until your proud temper is overcome."

You, Gentlemen, have placed the presentation of this Testimonial on the ground of certain literary labours. You must pardon, then, a little old man's gossip while I tell you what these literary labours really were, and while I do justice to one of the most honourable and good-feeling men in our profession.

In the month of June first appeared a name which has, from that hour to the present, been connected with the prosperity, but then with the very existence, of *THE VETERINARIAN*. Mr. Cartwright favoured us with a paper on Rupture of the Diaphragm, and this was the only communication which in three months we had. I had happened to be speaking to one of the great men at the College respecting *THE VETERINARIAN*, and he told me that we were fighting a hopeless battle, for it would and must perish for lack of food. To what extent "the wish was father to that thought" I pretend not to say; but certainly the nourishment administered by Mr. Cartwright did help to keep body and soul together in our poor Journal until better days arrived.

In July we were evidently mending. We had two short papers from Mr.

Garland, and the continuation of Mr. Cartwright's Essay on Rupture of the Diaphragm.

In August there was a still greater improvement. Mr. C. Percivall communicated three short papers, and we had one from Dr. Green, another from Mr. Saunders, and a third from Mr. S. Browne.

In September we had again our friend Cartwright on Disease of the Pericardium in Cattle, and the first notice from Mr. Newport on that important improvement in veterinary surgery, the Use of a Solution of the Sulphate of Zinc in Fistulous Wounds.

October brought Professor Dick into the field. It was a new and interesting subject—"Amputation in Compound Fractures of the Extremities in Cattle." He related three successful cases. I have the pleasure to tell him that I could now add three times three to them. To him belongs the satisfaction and the honour of having introduced this humane practice. We had likewise a contribution from Mr. Bean, and Mr. Moulden.

Certain veterinary surgeons had formed themselves into a Society—the Veterinary Medical Society—for the Discussion of Veterinary Subjects. Mr. W. Percivall had contributed the first Essay on Fistulous Parotid Duct. It had been read and debated, and ordered to be inserted in the November number of *THE VETERINARIAN*. From this moment the triumph of our Periodical was assured, and its readers and their contributions to it rapidly increased. Another paper from our indefatigable friend Cartwright appeared in this number.

In the number for December, appeared an Essay by Mr. W. Goodwin, on the Different Methods of Castration, and which had been read and discussed in the Society. This was a favourite subject with him, and he did full justice to it. There was also a communication from Mr. Leaver.

And so ended the first year of *THE VETERINARIAN*; during the whole of which we had received contributions from only eleven acknowledged correspondents, and had lost between sixty and seventy pounds. Still we were not discouraged, for the identification of *THE VETERINARIAN* with the Veterinary Medical Society would ensure it a far greater supply than it had hitherto possessed of interesting and valuable information. One of the Editors likewise had not only fitted up a theatre, in which the Society held its meetings, but in which he commenced a course of lectures on the Diseases of Cattle and Sheep. This also would afford matter for many an interesting communication.

In the course of the second volume many exceedingly interesting papers originating from the Society were introduced, and I will confine myself to a rapid enumeration of them. "On Inflammation of the Feet of Horses," by Mr. John Percivall. His account of the cause and symptoms of Laminitis was interesting, but it was in the consideration of the treatment, to which he brought the experience of a long life in the dépôt at Woolwich, that he triumphed. This paper has always been valued.

The next month gave the "Exposition of the Navicular Disease," by Mr. James Turner. He was here at home. Although there had previously existed some more or less indistinct notions of disease of the navicular bone, to Mr. Turner belonged the honour of being the first who brought it fairly under the notice of the profession. Much interest will be felt in this debate, when it is recollected that it formed the basis and contained the substance of Mr. Turner's subsequent publication on the Navicular Disease.

The paper on "Pleurisy," by Mr. Field, is an invaluable one. It gave a new complexion to the opinions of veterinary surgeons on this disease. It established, what had previously been denied, the existence of Pleurisy as a separate disease, and it clearly described its symptoms and its mode of treat-

ment, so different from that of inflammation of the parenchymatous substance of the lungs.

Of the next paper I will only say that it was on a new and important subject—"The Symptoms and Treatment of Inflammatory Fever in Cattle." It was the composition of the individual who now addresses you, and he endeavoured to do justice to it.

Mr. Henderson selected a subject unpresuming in its title, but on which many novel and useful remarks were elicited,—"*Splent in the Horse*," and the Distinction between it and *Node* in the Human Subject.

To this succeeded an ingenious paper on "*The Causes and Treatment of Pneumonia*," by Mr. Langworthy,—and another on a novel and most efficacious "*Treatment of Opened Joints, and particularly the Knee*," by Mr. Thomas Turner. This was a most ingenious application of the old-established principle, *never to remove the dressing until the joint had closed, and the synovia ceased to flow*.

To this followed the revival of the "*One-sided Nailed Shoe*," by Mr. James Turner, and the application of it to a new and noble purpose, viz., the expansion of the foot of the horse, and by that expansion, and consequent release from torture, conferring on that useful animal a boon, in the contemplation of which I can almost forgive the cautery lesions to which Mr. Turner had had recourse, and which he had so warmly defended.

I am too much intruding on your patience, and have time only to mention the titles of Mr. King's Essay on "*Puerperal Fever*," and in which, and the debate that ensued upon it, we contemplated the first dawn of those new and correct views of this mysterious disease, which were first adopted by Mr. Friend, and that have since almost ripened into perfect day.

Mr. W. Percivall's erudite Treatise on "*Soundness in Horses*" soon followed. It was an Herculean task that he attempted, but he was equal to its accomplishment. If we owed nothing more to Mr. Percivall than this simple view of soundness, that "*the animal is not merely free from disease, but equal to every useful purpose for which he was created*," we should lie under much obligation to him. The pleasure of the present meeting is much diminished by the knowledge that he is now kept from us by domestic affliction.

One paper more must be alluded to—Mr. W. Goodwin's explication of the most mysterious of all diseases, those of the "*Hock of the Horse*," and the reference of those which are not attended with external exostosis to ulceration of the synovial membrane of the cuneiform bones, gradually extending to and involving these bones.

In addition to these most important papers, no fewer than forty-three contributors, either voluntarily, or wanting but little pressing, enriched our Journal with their contributions—still, on the winding up of the year, we were again minus, although not to so great an extent as in the first year.

In the third volume we had precisely the same number of contributors, and we found that even that year had not quite covered its expenses, although the deficiency was comparatively small. At the expiration of 1831, there was a small balance in favour of that year. My valued collaborateur then left me to myself, and to the recollection of the mutual good-feeling with which, without one moment's alienation, we had worked together in a cause that we deeply felt ought ultimately to succeed, and that now promised not quite to deceive our expectations.

Mr. Field has been pleased to express himself in kind and flattering terms as to the labours and mortifications which attended our early career. I confess that there were times when, giving way to feelings of disappointment and of anger—anger that we had no right to indulge in, for there was no compulsion here—there were times when our grumblings were somewhat loud and deep :



but the arch look of my friend, and the query full of meaning—Iram *tantos volvis sub pectore fluctus?* would produce its sedative effect in a moment, and we went quietly to work again, for we were aware whose eyes were upon us, and we could hear and feel the good wishes of the few, amidst the silence, or, perchance, the execrations of others.

Duty and gratitude constrain me to acknowledge how much I owe to the first Editor of *THE VETERINARIAN*, and to that presiding spirit to which I have already alluded, and which communicated its character and spirit to the work. How often has he said to us, "Pursue the course you have marked out for yourselves; it is worthy of *THE VETERINARIAN* and of you. Attack, expose the measures—(they were fearful and disgraceful times in which the second volume of *THE VETERINARIAN* were written) but spare the man. You may have your private wrongs—I have;—but your work belongs to the profession, and dare ever to shew that you are in the slightest degree influenced by malignity or revenge, and I will disown *THE VETERINARIAN* and you." I can say with perfect truth, that he did, to a very considerable extent, give tone and feeling to this Periodical; and, even to the present hour, will the remembrance of him controul and direct a work anxiously nursed by him in its infancy, and regarded by him with exultation when it had reached a somewhat mature growth. I will not deny that the continuance of *THE VETERINARIAN* is, in a great measure, to be traced to the doggedness of him who cannot easily be driven from what he esteems a good purpose, and who, perhaps, somewhat too pertinaciously clings to that which may not be strictly defensible; but still he has a sacred duty to perform towards those to whom he, as an individual, and the profession generally, are so deeply indebted.

Eight years have nearly passed since this Periodical was consigned to me. Its progress has been slow, but steady; and I often flatter myself that it has yet attained but a part of its popularity, that it has accomplished but a part of its end and aim. In the way of pecuniary recompense, it is not that which some may imagine. It does not approach to what a practised writer would expect as his remuneration. I speak not this in the way of complaint, for it satisfies, fully satisfies me, and I do not know the bribe which would induce me to abandon or neglect it. My happiest hours are spent about it. They will become dearer to me from the recollections of such an evening as this: and when at some future, and, perhaps, no distant period, *THE VETERINARIAN* may revert to him with whom it originated, it will be enabled with bolder front to assume its standing among the Periodicals of the day, and better accomplish the noble purpose for which it was first instituted.

Sir, I stop not now to enumerate its rivals, or to ask what is become of the greater part of them. They had their day—it was a short one, and they are passed and gone. *Requiescant in pace!* Were I to particularize any of them, and perhaps, in language which on such an evening I ought not to use, I should refer to those by whom the original Society of the College was destroyed, and who would fain have strangled in its birth the present Veterinary Medical Association. It is one of the proudest circumstances connected with *THE VETERINARIAN*, that, acting in concert with some of the noblest spirits of their time, it contributed to the establishment of that Association, than which there will be no agent so intimately connected with the onward progress of our art. Have some of my friends forgiven the self-will which, on that occasion, I more than once exhibited, but by which eventually the cause of truth and science was benefitted?

Mr. Field has done me the kindness to allude to other writings of mine connected with veterinary science. "The Horse"—the first and the most imperfect of them—I had a double motive for exertion,—the love of the subject and the interest of my employers. I could not have expected that it

would have found its way into every European state, and that a translation of it is the text-book in some of the Continental schools. It is, however, one of the tasks which I have assigned to myself, old as I am, to prepare an edition of it more worthy of the subject, of you, and of veterinary science; and should I, forced by circumstances which I could not have anticipated, return again to the practice of my profession—this is a labour which *I will struggle hard to accomplish*. “Cattle” and “Sheep” will, I trust, be found more worthy of their theme; but I can see in both of them errors which ought not to have found a place there. As to the other little work to which allusion has been made, it beguiled many a painful hour when I was incapable of severer study, and it had reference to a duty, in the deep sense of which the veterinary surgeon will yield to no one,—the mitigation of animal suffering, in every possible meaning of the term. That little book contains principles which will gradually more and more impress the thoughtful mind, and, by degrees, influence one and another of the master spirits of our profession, until it will be felt pervading every part of this division of science, raising, enriching, ennobling it.

Within the last twelve months I have been much more actively employed than in former years in endeavouring to extend the instructions of the pupil of the Royal Veterinary College to every animal connected with the agriculture of our country. I shall not, I trust, be accused of urging any slight or false claims to your regard, when I state, that the moment I heard of the intended establishment of the English Agricultural Society, I wrote to Earl Spencer requesting to be enrolled one of its members, and I was one of the earliest, and with the payment of a sum which entitled me to be present, and to deliver my opinion at any or all of their committees.

It was, perhaps, this manifestation of zeal which induced them to nominate me one of the Committee of Management. Being placed there, I was the first to call the notice of the Committee to the state of veterinary affairs. I moved and obtained the appointment of a Veterinary Committee—I was appointed Chairman of that Committee—I drew up the memorial from the Society to the Governors of the College, regarding the extension of veterinary tuition, and I am proud to say that I was in frequent communication with the most influential members of the Society on this important matter.

The after-working out of the plan was committed to the father of the Society. Some steps were taken, and some improvements adopted. That it was not worked out to the extent that most of us contemplated I regret; but as long as I am permitted to belong to that Society it will be my strenuous endeavour that the interests of the agriculturist shall have their full share of regard in that institution, and that a system of tuition shall be adopted which will qualify the veterinary practitioner to become the farmer's friend, and to undertake the medical treatment of every domesticated animal.

You will kindly pardon this egotism. I should not have done justice to myself, nor, perhaps, to you, if this tale had not been told. I have told it in the presence of him who is well acquainted with every transaction of that Society, the late Secretary of the Society—a sincere friend to your cause—an unfeared but a talented and powerful advocate of your cause, a thoroughly honourable man, and whom I am truly proud to consider as my friend.

Gentlemen, you have awakened in me hopes, which, but for your marked kindness I should not have dared to indulge—that my “literary labours” will continue to be kindly received by you while I remain, and not altogether despised when I am gone. They encourage me to hope—in the language of one of the most powerful writers of our day—that when the name of the individual who now addresses you is invested with the solemn interests of the grave—when his eccentricities or his failings shall excite a smile or a shrug no longer—when the last seal is set upon his earthly career, his works may assume a place among the classics of his country.

I am told that the suggestion of this noble present originated with two of our brethren in the Sister Island. This was like the warm and kind feelings of Irishmen. I shall have an opportunity before I die to tell them how much I thank them.

You kindly left to me the selection of the nature of the Testimonial which you should present, and, enabling me to guess a little at the sum which you would have to expend, I selected a dinner service of silver—substantial, but as plain as it could be made—expressive of your kind and honest feeling, and expressive, too, of my own, and enabling me at times, perhaps,—for a few, but a very few years to come,—to hope to see some of you around my humble board, partaking of the plain fare which alone I could afford to set before you—the whole harmonizing with our feelings towards each other; and plainness and simplicity and honest friendly sentiments presiding among us, and regulating and increasing our pleasures. There we shall think most and talk most of the profession to which we belong. We shall trace the progress of veterinary improvement—we shall look with some little pleasure on this service as connected with one period of our struggle, and

Though Time may steal our hours away,  
And steal our pleasures too,  
The memory of the past will stay,  
And half our joys renew.

For myself, these testimonials of your kindness will be the companions of my happiest hours. They will bring back recollections dear to me at all times. In my own family—in my friendly associations—the remembrance of you will be present, and every joy will be doubled, particularly when the actors in many a past scene of arduous and anxious labour will honor my humble domicile with their presence, and many a dim sweet dream of the olden days will steal over our minds and augment and hallow our enjoyments. Gentlemen! I thank you. God bless you all.

*The Chairman* again rose. I rise (said he) to address you in remembrance of our departed Professor, feeling that, if the veterinary profession has not to lament the loss of its very master spirit, it most acutely suffers the bereavement of a genius who has presided over its destinies for half a century. Passing over his professional achievements, we have to deplore the loss of a man whose dignified and gentlemanly career and example earned and procured for every respectable and educated veterinarian the stamp of a gentleman, as conferred by the late Sovereign, George the Fourth, by his Majesty's Commission upon Army Veterinary Surgeons.

This is not the time and place to analyze and descant upon his numerous professional merits; but, although one of his admirers, I do not hesitate to avow that I think the Professor was less happy, as being farther from the truth, upon the subject of the foot of the horse—it being his very hobby—than upon physiology generally, where he was excellent.

But, gentlemen, did he not shine with splendour when he broached to his class, thirty years ago, his magnificent views of Ventilation, and its principle?

It required the genius of a Coleman to detect the germs of an insidious pest, where all was seemingly bright and fair.

The idea that every living healthy man is perpetually evolving from his own person an animal poison—aye, fair woman, too, of angelic form and sweetness, for whose smile monarchs race and wrestle to be first with the bended knee—now, gentlemen, if this is right in theory, its range in practice must be most extensive. It applies to every living creature, and appears an illustration of that dispensation of the omnipotent Creator, wherein we behold him ever



preserving the equilibrium of animated nature, by obviating aggression or invasion from a superabundant accumulation of any distinct species to the prejudice of the rest, for those after his own sacred image appear to be the first victims of this silent or self-acting system. By this immutable law of Nature, the destroying angel is there, sword in hand, though unseen. The assemblage of undue numbers in any given space, no matter how pure the locality in all other respects, is alone capable of engendering the pest, but collateral circumstances hasten or protract its consummation and consequent fatality. Gentlemen, for thus entrenching on your valuable time I am sure your pardon is safe to me, because it is all to the just praise and glory of our friend in the tomb.

Has he carried out practically in detail his grand principles of ventilation? I answer for you all, yes; but I will, single-handed, venture to accuse him of a reckless and careless inattention in their application to the stables of our blood-horses—I allude to racers and hunters of the first class; these being all descendants of the horse of the desert, a uniform high temperature, as likewise to some plants, is indispensable to their perfection.

Purity of atmosphere is not incompatible with a high degree of heat, if in constant circulation. But this master mind has left it open for some more humble workman to perfect his system—grand in itself, but rude in its execution. His oft-repeated exclamation, “*No horse ever catches cold*” has caused much schism in the camp.

Recall to mind the gloss, the splendid delicacy of the skin of a three-year-old Derby colt on the morning of the race, when his anxious trainer has justly and proudly announced him as “fit to go.” Imagine this gem of the brute creation in a ventilated roof stable, in the year 1839, of her Majesty’s cavalry, at four o’clock in the morning, a strong north-easterly wind having suddenly set in. In justice to his station, we will suppose our friend honoured with the best berth in the ship—that is, nearest the ventilator. Now, I ask, is he not in danger of an over-dose of the external atmosphere, notwithstanding his double body-clothing?

Independent of the general impression of chill, are there no delicate tissues within the caverns of the head, ears, or sympathetic nerves, to recoil from the blasts through the aperture in the wall nine inches square immediately over his head, with corresponding apertures below, opposite to his heels—cold currents incessantly applied in one direction only?

This is another instance of the exercise of man’s ingenuity for the benefit of the horse-kind as well as mankind, but adulterated with the admixture of some bane.

Shallow reasoning, gentlemen—take my word for it—to contend that a horse can’t catch cold.

The reform I have to propose is, a much larger space to be occupied by the ventilators in the very highest and lowest parts of the stable, and, by the aid of simple contrivances through zinc plates, the streams of air may be extremely subdivided; in imitation of the scattered projected streams of water from the rose of a watering-pot; and where a reasonable expense is not spared, a propelling force, self-acting, might be superadded from the outside of the building, by which apparatus a continued circulation of air within might be maintained.

But more on this point another day; I am travelling out of the record. Gentlemen, we will drink in silence to “The Memory of Professor Coleman.”

*The Chairman* again rose—he had now a toast to propose which came home to every one’s business and bosom: “The Veterinary Profession and its continued improvement.” It was that by which we obtained our living—that which was the subject of our earliest and latest thoughts—it was a portion of the great science of medicine. It had been rapidly improving—many of those

who now surrounded this board had contributed to effect its improvement, and they would labour in its cause to the latest period of life. Some were finding fault with its apparently stationary character, but he had lived to see many and great improvements in it. He rejoiced now in its union with a Society identified with the best interests of our country, and he was now sure that it would be our fault, if all its noble objects were not gradually but completely worked out. A toast like this required no long prefatory remarks. It would be drunk in bumpers.

*The Chairman* next proposed, "The Veterinary College, and the health of Professor Sewell." There were always many pleasing associations connected with the recollection of our early days, and especially of those scenes which were identified with our after progress in life. Our old Professor was passed away; with all his good qualities and his bad—and every man had both—he was gone to give his account. The Assistant-Professor, after a residence at the College of nearly forty years, was now in possession of those honours and emoluments which were the natural objects of his ambition. He was sorry to hear that Professor Sewell's health was so far from being completely re-established. He was now occasionally, or as often as the duties of his situation permitted, rustivating for a few days. He was right in so doing, for he had a fearful task to accomplish by-and-by. He had not the same ground to traverse, the beauties of which his predecessor had so ably illustrated. He had not only to do that which had fallen to the lot of Professor Coleman, and which occupied ably and fully the whole of his talents and his time,—but his work was doubled, trebled. In addition to the horse, he had the pathology of cattle and of sheep, and of every domesticated animal, to unfold and illustrate. He did not know how Professor Sewell felt in the contemplation of this, but it would completely daunt him, and it was not a little that would do that. The course of the Professor was, however, plain enough,—to throw himself heart and soul into the discharge of the duties of his office—to have all things plain and straightforward—and then, and then alone, he would be supported by the whole profession. It was a new and a most important era that was commencing—the character, almost the existence, of the profession was at stake. He hoped for the best, and he would beg to propose "The Veterinary College, and the health of Professor Sewell."

*The Chairman* apologized for again intruding on the meeting, but the duty assigned to him was now almost discharged. The departure of Professor Coleman had made no difference in the appointment of another gentleman, but a slight one in the title which he was to bear, and a much greater one, he trusted, in the honorarium to which he was so justly entitled. The professor of anatomy and physiology, in a medical school, had an onerous duty to discharge; perhaps more so than any other of the professors in that school. What should we say, then, of the labours of the Professor of Anatomy and Physiology in the Veterinary School, extending, like the pathological instructions, to every domesticated animal? We hail his appointment, but we cannot be insensible of the overwhelming degree of labour which will be his lot. It is a Herculean task; but never mind,—his heart is in the right place, and he is sound wind and limb. He congratulated him on his appointment. His duties would be honestly and honourably discharged, and his best reward would be the golden opinions which he should win from all his brethren. He gloried that he had lived to see the time, when, within the walls of the parent institution, this noble extension of the studies of the pupil was recognized and established.

*Mr. Spooner* rose and said,—*Mr. Chairman and Gentlemen*, The very kind and handsome manner in which the proposal of my health has been received by those whose friendship and association I highly prize, and shall ever endeavour to merit, I scarce need to say is most flattering to my feelings. It is, indeed, an honour which I am proud to acknowledge, and which calls forth

my warmest thanks. I have before been present at similar meetings to the one we are now enjoying, but I can safely say that no previous occasion has afforded me a greater pleasure than the one we have this evening met to commemorate; and when I look to my right hand and to my left, and see around this social board by far the majority of the most influential metropolitan members of our profession, and many from different parts of the country, whose talents stand deservedly high in the estimation of their professional brethren and the public, together with other gentlemen, private friends of our esteemed guest, who have all distinguished themselves in various branches of literature—when I see such men ardently engaged in the good cause of doing honour to him to whom honour is due, and thereby evincing their anxiety for the advancement of veterinary science, the best interests of which have always been uppermost in my own heart,—I can, without hesitation, state, that the present moment to me is one of high gratification.

That our profession of late years has been progressively improving, I think no one will deny; and when I say, that Mr. Youatt, by his unwearied exertions in the literary department, has done more than any other individual towards effecting that desired object, I feel that I am expressing the sentiments of all.

The versatility of his talents is such as falls to the lot of but few; and when we reflect that those talents, guided by straightforward and honest principles, have for many years been strenuously engaged for the benefit of our art, we ought, and I am sure we do, one and all of us, feel proud of this opportunity of convincing him of the high value we put upon his mental acquirements, and the esteem we feel for him as a friend.

Empty words, however, are but as bubbles upon the water, which expand on its surface and become attractive to the eye, yet, ere a few seconds have elapsed, burst and leave not a trace behind wherewith to mark the spot whence they arose. The token, however, which is now before us, and which has this night been presented to Mr. Youatt, is composed of lasting materials, which may be handed down to posterity; and when no longer the harmonious concord of sweet sentiments, with which its presentation was accompanied in the eloquent address of Mr. Field, shall vibrate in our ears—when we of the present age shall have passed away, it may still remain in the possession of those who will be proud to exhibit it as a proof that in our time there were those in our profession who could appreciate the merits of a man who, during many a year, both through evil and through good report, steadily and perseveringly laboured hard and successfully to exalt us as a body, by inculcating the true principles upon which the veterinary art is based.

I can entertain no wish to lessen the force of the very able speech of Mr. Field; for every word of it was expressive of my own feelings, and, I think I can safely say, the feelings of us all; it was a simple yet sublime species of eloquence that has made an impression upon our minds, which during life will never be forgotten. Yet there is one circumstance which has of late taken place, to which Mr. Field did not allude, and which Mr. Youatt has been principally instrumental in bringing about; an occurrence of vast importance, perhaps second to none, as being calculated for the improvement and the general extension of the usefulness of our art;—I mean the union of the Veterinary College with the English Agricultural Society.

It must be admitted that the study of the pupil has hitherto been too exclusive; I trust, however, that the time is not far distant, when his attention will be directed to every branch of veterinary science which will be calculated to render him a competent general practitioner. It will afford me the highest delight to be, in conjunction with Professor Sewell, one of the humble agents in effecting that desired end. It cannot, however, be expected that every thing relative to the new field of research upon which we are



about to enter can be perfected in one session : indeed, to anticipate this, would be to depreciate the importance of the subject.

Our worthy chairman, Mr. Turner, in proposing my health, has been pleased to pass many flattering eulogiums upon me : much, however, of what he has said, must be set down to that genuine warmth of heart which he is known at all times to evince towards a friend. He has said that I am young, fresh, and sound in body and in mind. Now this is saying a great deal ; and although I am not about to make a confession of physical defects, or mental derangement, I may venture to observe that, after a horse has been subjected to the scrutinizing eye of a judge, it is seldom that he can be pronounced absolutely sound, and free from vice ; and no one is better acquainted with this fact than my friend, Mr. Turner. There may be those present who are more conversant with human perfection and imperfection than myself ; but I think the same thing applies even to every human being. You must take him with his defects, as well as his excellencies, and the observation of the latter must often render you a little blind to the former.

I will, however, confess thus much, namely, that I feel deeply the responsibility of the situation in which I have the honour to be placed, and will ever exert my utmost endeavours to fulfil the expectations of the governors of the institution—to merit the esteem and good fellowship of those with whom I shall act, and to obtain the confidence and support of every well-thinking member of the profession. Failing in this, I will never consent to hold a situation where I can only be considered as a clog to the advancement of science, and a mark to be shot at by all those who are anxious for its welfare.

*Mr. Youatt* said, that although he had already addressed the meeting at a wearisome length, he begged permission to propose the next toast : it was “The health of Professor Dick, and prosperity to the Edinburgh Veterinary School.” It was highly flattering to him, that although principally for the purpose of accomplishing a praiseworthy object, yet, partly that he might witness the honours conferred on an old friend, Mr. Dick had journeyed more than four hundred miles. The Edinburgh Veterinary School owes its origin, its progress, and its success, to the undivided exertions of Professor Dick. He had read with intense interest, and so had every one around him, the history which the Professor gave, at the close of the last session of his school, of his unaided, determined struggle to found in the Northern capital an institution resembling that at St. Pancras. He had fought and he had conquered. The certificated pupils of his school were now recognized at the Horse Guards as eligible to bear commissions in her Majesty's Cavalry Service. This was as it should be. Let each institution stand on equal ground, and let only the contest between them be, which shall most efficiently prepare the pupil for the discharge of the duties of his profession !

He claimed permission to propose the present toast, because in Professor Dick he recognized one of the earliest contributors to *THE VETERINARIAN*. He was one of the eleven, who, in the first year of the struggle of that periodical for existence, supplied it with literary food. His contributions, perhaps, were not so numerous as some others, because his time was more than fully occupied in conducting, single handed, the veterinary school of the north ; but they were always welcome and valuable. And when at a subsequent period he had the presumption to endeavour to attach other and better names to his own, as editors of *THE VETERINARIAN*, Professor Dick kindly and promptly consented to permit his name to give additional value to the work. The first editor, with all the kindness that he has uniformly manifested, objected not that his name should still appear in the situation which it had always honoured ; and his valued friend Mr. Karkcek, of Truro, refused not that his name should be added to the list. Those were glorious days for *THE VETERINARIAN* : but there were still some violent spirits abroad, and they began to

apply to the editors of *THE VETERINARIAN*, generally, language which they would not have dared to have used to either of the individuals. When taken to task, as they naturally would be, "They disavowed any reference to either of the Editors personally, but claimed a right to use the most blackguard language with regard to the publication generally! It was necessary to put down all this, and for him to whom the property of the Journal belonged to stand forward as *its single editor*, thereby necessarily taking upon himself every kind of censure, while the praise would still, in his own mind, and that of the public, be divided between his kind supporters and himself. Still the breaking of such an affair to them—the possible construction which they, and which the readers of *THE VETERINARIAN* might put upon it! He will never forget the pain which he suffered—nor the prompt kindness with which they acceded to that which a disgraceful necessity seemed to force upon us all—nor the friendly feeling which seemed to increase among us, shewn by the more frequent and readier communication of valuable matter. I avail myself of the opportunity which the presence of Professor Dick now gives me, of assuring him, how deeply I felt the increased obligation under which he and his friends laid me.

*Professor Dick* thus replied:—Mr. President, I beg to return my best thanks for the honour which has been done me, and for the manner in which my health has been proposed and received. I have long had a desire to be present at one of the convivial meetings of my brethren of the profession in London; but these meetings were generally held at a time at which it was impossible for me to leave Edinburgh, and I have, therefore, been often disappointed; but when I heard of the present meeting, and the cause of it, and finding that I could contrive to be absent for a little while, I determined to join you in offering my tribute of respect to our distinguished guest, and I can assure you I have great pleasure in being here.

I am unwilling on such an occasion, and at so late an hour, to offer any remarks which have not some connexion with the present pleasurable occasion; but as various professional topics have been introduced, I cannot refrain from stating candidly, that, while I have been powerfully attracted by the cause of the present meeting, I have been also induced to embrace the opportunity offered by the lamented death of Professor Coleman, to endeavour to prevent a powerful obstacle being placed in the way of the advancement of my pupils. I have, therefore, been so far selfish as to attempt, as the Scotch proverb says, "to kill two dogs with one stone." The truth is, I have felt somewhat aggrieved by learning that it has been proposed, since Mr. Coleman's death, that all students, and my pupils among the rest, wishing to attend the London school (although they may be possessed of a diploma from the Edinburgh Institution), shall be compelled to attend eighteen months at the London school before they are allowed to be examined for its diploma.

Now, I ask, is it possible that such a spirit of illiberality prevails at the London Veterinary College? Is it possible that, in the nineteenth century, when almost every scientific institution is adopting a more liberal policy than at any former period, the Veterinary College of London should be taking a directly opposite course?—that while the London University is willing to receive certificates of attendance at any respectable and acknowledged medical school as a sufficient warrant for the granting of a diploma, if the requisite information is possessed by the candidate, the London Veterinary College shall pretend to exact six times the length of attendance it formerly required; and that, too, from the pupils of the Edinburgh Veterinary School, who, by the extreme liberality of the Professors and Lecturers in Edinburgh, are allowed the advantage of attending a whole medical curriculum, besides being compelled to attend two courses of my lectures before receiving their certificate? Is it

possible that, possessed of such advantages, they are to be placed with the babies of the London school? Tell me why? Tell me, what you pretend to teach them here that they have not had an opportunity of knowing, and for which you would exact an attendance of eighteen months? Is it your diploma? Why, I have, I think, succeeded in rendering that a matter of little inducement for such an attendance, because my journey to London has been, in some measure, to get the pupils of both schools placed on an equal footing: and I think I have succeeded, and a neutral person will be appointed Principal Veterinary Surgeon, in the room of Mr. Coleman. I have thus removed one of the inducements to attend the London School.

But, Sir, I can further state, that the illiberality of the London School has already begun to meet its own reward, and the first effect of the regulation in question has been to deprive its funds of twenty guineas. Within these three weeks, one of my pupils who would have come to the London College, has, in consequence of this arrangement, gone elsewhere; and such will be the course that others will pursue, so long as the present regulation exists. When there is no inducement, there will be few found to take so long a journey, and put themselves to so much expense.

Allow me also to allude to another subject which has been referred to—the onerous duties which will devolve upon the new Assistant Professor,—the labour of teaching the anatomy and physiology of the different subjects entrusted to his care. I am sorry I cannot agree with you, Sir, on this point, because, with some experience, I contend that the various animals under our care being formed and constructed by the Author of Nature on one general plan, the analogy that exists will rather serve to assist than retard the examination of the various subjects. In the skeleton, for example, is there not a strong general resemblance? Look at the lungs; are they not similarly arranged? With regard to their mechanism, are not their functions alike?—are they not made up of cartilaginous tubes composed of imperfect rings, and vessels, and nerves, and membranes similarly arranged?—and is it unreasonable to expect that analogous diseases will attack similar structures performing similar functions, and that similar treatment under disease will be required? But your time will not permit me to enlarge, and I therefore conclude by again thanking you for the honour you have done me by drinking my health.

*Mr. Simonds* then claimed the attention of the Chairman.

The toast (said he) to which I am about to call your attention, is one that I feel confident will be met by a hearty response. It is the “Prosperity of the English Agricultural Society.” To speak of the noble deeds of such an Association, I could have wished had been entrusted to some more able person, and I must, therefore, claim your kind indulgence while I attempt to do some justice to the subject. This Society, composed of most of the greatest men of which England can boast, looked anxiously around it, at its first formation, to discover in what way the interests and onward progress of agriculture could best be promoted. Among many other things which were most desirable, was a security against the heavy losses annually sustained by farmers, from the ravages of disease among their cattle, and it was resolved “to take measures for the improvement of the veterinary art, as applied to cattle, sheep, and pigs.” A sub-committee was appointed to carry into effect this desirable object.

Although an individual ox or sheep cannot be said to equal the horse in pecuniary value, still we must bear in mind that, collectively, they constitute by far the larger amount of the property of the agriculturist, and from some cause, but of which I will not now speak, this large amount of property was, so far as our art is concerned, totally neglected: nay, the matter was worse than this, for encouragement was given to men to practise in every way that ignorance might dictate, and thus to torture, and frequently to destroy, these valuable animals when labouring under disease.



Thanks to the exertions of this noble Society, that state of things has passed, they having brought about an amalgamation of our art with its sister science, agriculture. As a member of the sub-committee, I could tell you how much we owe to a certain individual for the accomplishment of this improvement! how great a debt of gratitude is due from us to the gentleman who was appointed the chairman of this committee. We are this day met to tender him our heartfelt thanks for the many benefits which, through his energy, and the devotion of his talents and his labours, have been conferred upon our profession.

The veterinary student will now be instructed in that long-neglected branch of his education, for, already, as you know, a Lecturer upon the Anatomy and Physiology of Cattle and Sheep, &c., has been appointed at the Veterinary College, and to you, who are so well aware of the talent and the industry of our friend—Assistant-Professor Spooner—I need not speak of his capability, and his wish to impart to the pupil a thorough knowledge of this important division of his studies. I need not tell you how essential it is for the student to receive a correct notion of the structure and functions of the various organs of an animal—the parts of a machine—which he will, herafter, be called upon to repair, when, from disease, their office becomes deranged. Without this knowledge his practice can be nothing but empirical.

The other gentleman, to whom has been allotted the task of teaching the aspirant for veterinary honours, a still more important branch of our science, as it relates to these animals, namely, their pathology—the various and occasionally complex diseases to which they are subject—is one whom we cannot but admire for his devotion to his art, his perseverance, his desire for its onward progress, and his kindness to the pupil; need I say that I allude to Professor Sewell. By their united exertions, I feel satisfied that the pupil will receive that instruction which will enable him to rescue in after-life many an animal that would otherwise have fallen a sacrifice to disease, and thus accomplish the good intended by the English Agricultural Society.

If I had any fear of the full carrying out of the grand desideratum, it would be that produced by knowing how much the valuable time of our present and worthy Professor is occupied. His heart must, indeed, be thrown into the cause, and his labours must be unremitting, to enable him fully to accomplish the task which will be required of him; but we know and admire his perseverance and assiduity. May his health be fully re-established! Gentlemen, I will not detain you longer; for already do I see the bumper filled, and yourselves most anxious to join me in pledging the prosperity of the English Agricultural Society.

*Mr. Shaw*, the former Secretary to the English Agricultural Society, thus replied:—Mr. Chairman, and Gentlemen, I paused awhile, in the hope of finding that some member of the English Agricultural Society was present, who would acknowledge in more appropriate language than I can the toast which has been so cordially received. No person appearing, however, I lose not a moment in rising to return thanks for the honour you have conferred upon this society. Although suffering considerable bodily pain, I could not refrain from attending here to day, to witness the presentation of a well-merited testimonial to one whom I am proud to call my friend. In addition to the observations upon his merits, and the gratitude due to him from the veterinary profession, I must add that, in the position which I lately held in the Agricultural Society, I had an opportunity of witnessing the zeal with which he laboured to bring about that connexion which has recently been formed between the Society and the Veterinary College, and which, if established upon sound principles, and carried out with proper energy, cannot fail to be

productive of infinite advantage to both institutions. It has been remarked this evening, that the veterinary profession owes a debt of gratitude to the late Professor Coleman, for having given that profession, as it were, a standing in society, by getting its members recognized as officers when attached to cavalry regiments. I would not have it thought that I seek to derogate from the merits of the late Professor; but I am rather inclined to believe that time and circumstances had much more weight in promoting that object than either the influence or the exertions of that departed individual. A war carried on upon a very extensive scale, in which great numbers of horses were employed, rendered the government and the country alive to the importance of the veterinary profession, and hence, as it seems to me, the just mark of distinction bestowed upon its practitioners. So, on the other hand, I am inclined to view in a somewhat similar light the apathy which has been displayed in respect to the diseases of the other domesticated animals, and the impediments which, it is said, were interposed to prevent the study of those diseases at the Veterinary College. Independent of its utility, fashion and pleasure, supported by wealth, combined to stimulate attention to the horse. The time had not arrived when the amount of capital invested by the agricultural interest in cattle, sheep, and pigs, not to forget horses used for agricultural purposes, far exceeded that of horses used for all other purposes, and hence the cause of those animals being left to be treated by the ignorant and the unskilful. That time is now come; circumstances begin to operate by calling attention to the subject; and a fine field is opened to the practitioners of the veterinary profession, not only to elevate that profession, but to acquire affluence individually. If, however, I may be permitted to hazard an opinion, I would observe, that the elevation which that profession may attain, must, in a main degree, if not altogether, depend upon the exertions of its members. Feeling a lively interest in every thing which concerns agriculture, I am happy to have had this opportunity of intermixing with gentlemen whose pursuits are so nearly connected, and whose interests are so intimately blended with it; and in the name and in behalf of the English Agricultural Society, I return you my most sincere thanks.

*Mr. Henderson* proposed "the Health of Mr. Turner," as the Chairman of the present happy meeting. He was always ready for every good work, and the moment that he was told that our friend Mr. Percivall could not be present, he acceded to our request that he would occupy the chair. Well and worthily had he done so. He would beg, however, to couple the health of the chairman with another subject, which, in truth, was worthy of a separate toast, but which was very appropriate as connected with the present one, "Veterinary Authors." It was to acknowledge the literary labours of one gentleman that we assembled to-day, and well did he deserve the compliment that had been paid to him. It is true that he is now waning into the vale of years; but he might live, and he hoped he would live many a year to conduct the veterinary Journal—our own Journal—and occasionally to see around him those whom he values, and who esteem and love him. If our friend Mr. Percivall had occupied the chair to-day, the toast would have come home to the business and bosoms of us all; our indefatigable friend—our guest to-night; the classical writer of our profession, W. Percivall, who delights while he instructs; and our ardent, practical friend, the Chairman, with his Treatise on the Navicular Joint Lameness; our zealous and scientific friend the Secretary, zealous in elucidating a branch of veterinary instruction too much neglected,—we should have had a constellation of talent. If we had wanted more, here is the luminary of our northern sky, Professor Dick, whom we

are happy and proud to see among us. Gentlemen, I will not weaken the effect of such a toast by any observations of mine, but I give you, and you will drink it with full bumpers, "The Health of Mr. Turner, and our Veterinary Authors."

*Mr. Turner* scarcely knew how to reply to the compliments which had been paid to him by *Mr. Henderson*, and the kind, he was going to say enthusiastic manner in which the toast had been given. He might be a plain blunt man, but he would always be ready for every good work connected with the profession that he practised and loved. He contemplated with unmingled satisfaction the onward progress of our art, and he was assured that now, or at no distant time, every valuable improvement would be honestly and efficiently adopted.

"The Veterinary Authors" had been coupled with this toast. He was an author—he hoped that the subjects on which he had treated were not altogether unimportant—he was assured that they were not so, for they were to a considerable degree, and more and more generally, adopted by his brethren. He cordially joined in the praises which were bestowed on his excellent friend on his right, and the Scottish professor beyond him. He might differ with the latter on some points of practice, and, perhaps, of collegiate discipline; but he was proud to acknowledge him as a highly-talented and zealous man, and, like himself, heartily attached to his profession. Of the now voluminous works of *Mr. Percivall*, he could only speak with the deepest sense of their value, and he regretted his absence to-night. As to his friend *Mr. Spooner*, he had not yet enrolled himself among the Society of Authors; but he soon must—there was a ground peculiarly his own, which he must occupy. In plain English—the profession looked to him, and would have him. His friend *Mr. Morton*! He thanked him, thanked him cordially for the little book which he had presented to the profession. It was *multum in parvo*; but he should be better pleased if in its next edition it became as big as his (the Chairman's) body.

*The Chairman* rose again. There was a gentleman, he said, who must not be passed over on the present occasion. The profession had done that which, perhaps, years ago it should have done. They had presented a testimonial of their approbation and their gratitude to the indefatigable labourer in veterinary literature, whom they had the pleasure to see among them this evening. But it is not the testimonial alone, nor the price which it costs, that gives the chiefest value to such a present. It is the manner in which it is presented—the heart that is thrown into it—the quiet but deep feeling which pervades the bosom of the speaker, and that finds a response in that of every one around. In the name of his brethren he would thank *Mr. Field*. He had responded to their bidding in a way which did them and himself honour, and he begged to propose his health.

*Mr. Field* felt much gratified in this expression of their satisfaction. He had asked an inward monitor what he ought to say and to do, and he had acted accordingly: most cordially he begged leave to thank them.

*Mr. Thomas Turner* said that there were many gentlemen present who were connected with the press. His friend on his right was a veteran. Many were his labours, and battles, and conquests connected with the press. Professor *Dick* had ventured to offer himself to its ordeal, and he was gratified to hear that we should soon receive from the pen of that gentleman a publication on a subject of deep interest,—rabies. Next him sat the able Editor of the best agricultural paper, and the best agricultural magazine,—*Mr. Shaw*, late Secretary to the English Agricultural Society. *Mr. Morton* had done himself infinite credit by the publication of his "Manual of Veteri-



nary Chemistry," and, although the Chairman was his brother, he would say of him that he had not been quite idle in so good a cause. There were others who had written various papers which contributed to the value and effected the excellent purposes of *our* standard periodical. All would join him in his toast—"Success to that mighty Engine the Press," which, when conducted with integrity and honour, is one of the greatest blessings to our country.

*Mr. Ritchie* briefly acknowledged this toast. He lamented his inability to do justice to a subject in which the interests of all present, and, indeed, of every one in existence, were deeply involved. Were it not for the Press, the philosopher might study, the chemist might experiment, and the veterinary surgeon might practise from year to year, but the results of their labours would seldom be known beyond the immediate circle in which they moved. But the Press gives permanence to discovery—it clothes knowledge in an imperishable garment, and rolls it, like a flood of light, o'er the nations of the earth. It had been truly called the Telegraph of Mind. Through it we communicate with the intelligent of every clime, and even hold converse with the illustrious dead. It brings back the past, secures the present, and transmits both to posterity. That an engine capable of effecting so much good should sometimes be employed for base purposes, is matter of deep regret; but he had seen it used to decry merit—to war against right—and to pluck the well-earned reward from the hands of those who had sacrificed years in endeavouring to benefit their race. That such things might speedily cease, must be the wish of every honest heart; and strong in hope that the time was not far distant when the productions of the mind would be acknowledged as sacred property, he would venture, though perhaps a little out of order, to propose a toast, which he doubted not would meet with a cordial reception: he would propose "The Rights of Authors—may they be fully acknowledged and ever respected."

*Mr. Dickens* then rose and said,—Mr. Chairman, in rising to offer to your notice the toast I am about to propose, I am sure that I have only to name it, and you will agree with me that we should be guilty of a gross dereliction of duty, did we omit it, "The Country Practitioners." Would, sir, that we had a greater portion of them with us to-day, to do due honour to our friend, Mr. Youatt. In the report of a late veterinary dinner, I was pleased to observe that Mr. Field, when speaking of veterinary works and veterinary authors, said that *THE VETERINARIAN* was a library of itself, and I am sure there is not one present who will not agree with that talented gentleman.

But, sir, such language, emanating from such a source, would be sufficient alone to raise any work not only in the estimation of the thinking part of the public, much more in that of the veterinary practitioner. If this work is of such acknowledged worth to you, the majority of whom are practising in this metropolis, where you have such frequent opportunities of meeting each other, of mingling in debate, and thereby making yourselves acquainted with the varied improvements that are taking place in our art, of how much more value must it be to those who, like myself, are practising in the provincial towns, where our patients, if not fewer, are certainly farther between, and therefore requiring a greater degree of physical energy to accomplish our purposes with regard to them, and consequently leaving less time for diving into the depths of veterinary literature! Thanks to Mr. Youatt, this chasm is now in part filled up, and you are thereby prevented from getting the long march ahead of us. For we have at the early part of every month an old friend looking in upon us, enwrapped in yellow clothing, representing the well known house of Youatt, Percivall, and Co. and offering to our notice

various articles manufactured by the best English workmen, together with some of foreign production, well worthy of notice : added to which, are some pleasing miscellaneous articles ; and from whose stock we can, if we please, replenish any of the recesses that have become vacant in our store-room of veterinary knowledge. Did I possess the ability, and were language worthy of my toast at my command, I should not have sufficient apology for stopping the circulation of the bottle and the hilarity, sociality, and the true friendly feeling of this delightful evening. I shall, therefore, without further preface, propose, "The Provincial Veterinary Practitioners."

*Mr. Youatt* begged to propose another toast. "The Vice-Chairmen." Our excellent friends had not left much for them to do ; but it was gratifying to behold such sterling men and true at the ends of our table ; and there were not, in the whole profession, men more ardently attached to it than our friends *Mr. Henderson* and *Mr. Thomas Turner*. With many cordial thanks for their exertions this evening, he would give their health.

*Mr. Thomas Turner* in his own name, and that of his brother croupier, rose to express their best thanks for the honour conferred upon them. They felt a more than ordinary degree of gratification at being present this evening, and witnessing the presentation of that Testimonial to their esteemed friend, *Mr. Youatt*, as a slight reward for his well-merited services to the veterinary profession ; and they sincerely hoped he might be spared long among them to enjoy its frequent use, and not without a kindly feeling towards those by whom it was presented.

*Mr. Field* said, that there was still an act of duty and of gratitude which they had to perform ere they parted. It was delightful to contemplate the completion of this testimony of a united profession to the worth of their guest of to-night : and a more harmonious and joyous evening it had been the lot of few of them to spend. It was partly the object of their meeting which had rendered it so pleasant, but it was also, in a great measure, the arrangements of an individual who, from the moment that the idea of this appropriate testimonial was started, threw himself into the affair, and laboured day and night until it was perfectly accomplished. We owe him much for this. But he had another claim upon us. He was now an acknowledged teacher at the Royal Veterinary College ; and a branch of instruction had been entrusted to him, second in importance to none there taught, and to the perfect elucidation of which he was acknowledged by all to be fully competent. He alluded to their worthy Secretary, than whom there were few who ranked higher in his esteem, and in that of the united profession. At this late hour he would say no more. Such a toast spoke sufficiently for itself. He proposed "The health of our worthy Secretary, *Mr. Morton*."

*Mr. Morton* thus replied.—I should justly be charged with that which would degrade man did I not, on the present occasion, feel grateful for the honour you have conferred upon me. To have been chosen as your Secretary was to me highly gratifying ; but to have received assurance that the duties of my office have been satisfactorily performed, highly enhances this gratification ; since, next to the pleasure of being engaged in a good cause, is the satisfaction which arises from its favourable termination—and this we have met to-night to celebrate.

It has been my good fortune to be often similarly situated. The first time that I was engaged in a pleasing duty like this, was for him who, during the long period of forty-five years, maintained the honour and respectability of the Professor's chair. To him veterinary science owes much, and he deserved and obtained the thanks of the profession. In common with us all he had his faults ; but the grave has closed over him and them, and he is now

in the possession of that rest so beautifully described by the poet Montgomery :—

“ There is a calm for those who weep,  
A rest for weary pilgrims found ;  
They softly lie, and sweetly sleep  
Low in the ground.  
The storm that wrecks the winter-sky  
No more disturbs their deep repose,  
Than Summer evening's latest sigh  
That shuts the rose.”

We, too, must be gathered to our fathers ; but the thistle-down will float as lightly, and the songsters of the grove warble as sweetly, then as now. The memory of the late Professor will be revered by many of us. I, at least, shall have cause to respect it, for he was my friend.

The next occasion was for him who has so justly succeeded to the Professorship ; from whom much good is anticipated, and to whom the eyes of the profession are directed. Nor do I think he will disappoint the hopes that are formed ; for I have heard him say, that he is only anxious to occupy that chair as long as he can be useful in it ; and you are all acquainted with him. He has long been weighed in the balance, and is justly esteemed by you.

This brings me to the present evening, and, perhaps, I ought to speak of him who is now with us, and whose talents we have all so much cause to respect and admire ; but the flood-tide of eloquence which has poured in upon us, would make words of mine like the pattering of drops of rain upon the mighty expanse of waters. Much as the former pleasing events delighted me, this has afforded me equal gratification. I do contend that we are more indebted to him who clears away the brushwood from the forest, scaring thence the poisonous reptile, and making a pathway through the wild, than to another who afterwards covers that path with costly marble, or inlays it with mosaic work ;—to him who builds but a hut in the desert, than to him who, on the foundation which had been before laid, erects the most magnificent superstructure. Such have been the labours of Mr. Youatt. He has achieved that, almost singly and alone, which many have often failed to do ; and shall we then withhold from him our thanks ? Rather does he not merit more than we can give ?

It will be, perhaps, pleasing to you, to know how and by whom this expression of our esteem for Mr. Youatt was brought about. The subject had been frequently conversed on at our private meetings ; but it was thought that, as certain matters were yet in abeyance, the present was not the fitting time for any public manifestation. A few months since, I received a communication from Mr. W. Taylor, V.S., of Belfast, urging me to take the matter up, and in glowing language pointing out the merits of the man and the debt of gratitude which the veterinary profession owes to him. I replied, that I cordially agreed with him ; but as yet the fitting time had not arrived. Very soon after this, a letter came from Mr. Hugh Ferguson, V.S., of Dublin, expressing precisely the same sentiments. Now, what was to be done ? It appeared that many entertained the same views, and that without intercourse with each other—the union between the English Agricultural Society and the Veterinary College was rapidly cementing, and *the fitting time had arrived*. The opinion of the profession generally was now sounded, and the result is before you ; and we rejoice in such a termination of our labours.

As your Secretary, I feel it my duty to give you the particulars connected with the Testimonial ; but at this late hour of the evening, I must be brief. The number of Contributors is 125.



The sum received .....	£197	14	0
The expenses incident .....	11	14	0
<hr/>			
Leaving a balance of.....	£186	0	0

which has been expended in a Service of Plate, agreeably to the desire of Mr. Youatt. May he to whom this night it has been presented live long to enjoy it; and may the wishes so admirably expressed by Mr. Field be realized by him. For my own part, I have gained much, both from him and these associations; for I have experienced the honour which results from being connected with those who are justly esteemed, and the luxury which arises from doing good.

(M.)

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## A CASE OF ENORMOUS ENLARGEMENT OF THE KIDNEY IN A HORSE.

*By Mr. JAMES FREEMAN, V.S., Winterton, Lincolnshire.*

I BEG to send a brief account of a case which I think of very rare occurrence, and that came under my notice on the 13th of November, 1838. The patient was an entire coach-horse, rising six years old, the property of Mr. Robert Hill, of Alkborough, who had purchased the horse three months previously. He stood nearly seventeen hands high, and he used to carry rather a light carcass, but now a very huge one, in fact, as large as that of an old cow in calf, and just at the time of calving.

When I first saw the horse he was labouring under superpurgation. The respiration was quick, the pulse quick and weak, and the body and extremities deathly cold. A bottle of linseed oil had been given to him on the previous evening, and this had set up the purging, which ceased not while he lived.

The owner asked me what was the complaint. I evaded any peremptory diagnosis, but I told him that I thought it probable that we should find enlargement of the liver, for when he lay on his left side I could see and feel a large hard substance pressing against the parietes of the abdomen on the right side; there was much anasarca under the belly, and the scrotum was much swollen and pendulous. The membranes of the eyes, nose, and mouth were deeply tinged. There was a staring coat, and the skin fast to the ribs. He staled frequently, and the urine was of a high colour.

I did not wish to do any thing to him, for I saw no hope of being

useful; but Mr. Hill urged me to throw myself into the case, as the horse was rising in repute as a good stock-getter. I therefore prescribed some tonic and astringent medicines, and had the legs bandaged, and the body well clothed down. The only food that he would take for the eleven days that he lived was wheat-meal gruel and sago, a little of which he would drink, let us make it as thick as we would, and, in truth, we could not wish him to take any thing better. He continued nearly in the same state while he lived, except that he coughed occasionally; the pulse became exceedingly weak, and ranged generally about 75; the legs and ears were never warm; his appetite gradually diminished; indeed, he did not eat seven pounds of the meal in the whole eleven days, yet his belly became larger every day.

I still thought that we should find the principal seat of disease in the liver, although I began to recollect that, eighteen months prior to this, his former master had brought him to my house because he could not, as he told my assistant, pass his water. I was from home. His owner, with whom I was on good terms, took away with him my male catheter. The horse soon got better, and, I believe, without the aid of the instrument, and he never was apparently amiss, either before that or since, until he went to his new master, about ten weeks ago.

I afterwards learned, that on the very next day to that he staled great quantities of coagulated blood, and was attacked by violent pains, which were attributed to colic. His master gave him two urine balls, which relieved him, and he did not stale any more blood, or exhibit any uneasiness until the day that I saw him: except that he appeared to have a larger body than he should have, or had before. He had travelled two seasons as a stallion, and the season prior to his death he stood in the stable, and several mares were sent to him, which foaled in the course of this summer.

The horse died on the 24th. I told the owner that I much wished to open him, to which he readily consented.

There was a great quantity of yellow-coloured fluid in the cellular membrane of the scrotum, and the under surface of the abdomen. The testicles were laid open, and in the centre of each was a cavity filled with fungus and grumous blood, and a somewhat similar appearance was continued up the cords into the abdomen. The abdominal muscles were then cut through, and the cause of death immediately presented itself. There was an enormous tumour, shaped something like a kidney. In fact, it was the right kidney. It was as large as, or larger than one of the cornua of the uterus of a cow far advanced in pregnancy. When I had dissected it out I put my arms around it, but could only just clasp my hands.

I could not lift it. It was suspended close to the spine, and appeared to derive its nourishment from the emulgent artery. Its natural texture was lost, and it seemed to consist of a cheesy matter enveloped in a strong tunic. I am sorry to say that we foolishly neglected accurately to weigh it; but, afterwards conversing about it, Mr. Hill and myself, and others who were present, thought that it weighed more than 112 pounds.

Beside this substance, there was another tumour, as large as a man's head, on the surface of the liver, and other smaller ones. The mesentery, and omentum, and peritoneum were literally covered with similar substances, great and small. I can compare them to nothing which had a greater resemblance to them than the belly of a hen who is laying, and the whole of it filled with eggs of various sizes. I should say, that there were, in all of them, at least fifty of these detached and separate tumours, and, altogether, making at least  $1\frac{1}{2}$  cwt. of diseased substance.

The other kidney appeared to be healthy, although rather large. The stomach and intestines were healthy, except that the mucous coat was of a leaden colour—caused probably by the superpurgation—the very bladder was healthy, the heart was rather large and flabby, and the right lobe of the lungs contained a little purulent matter, which, probably, was the cause of the slight cough.

Will the Editor, or some gentleman, kindly give me his opinion as to the origin and duration of this disease? I do assure you that the account which I have given is not in the slightest degree overcharged.

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The tendency to spurious formations in various parts, or in almost every part of the lymphatic system, is a circumstance that cannot have escaped the notice of any practitioner, and these growths are generally of a similar consistence. They are not encysted; there is usually too small a quantity of cellular tissue in them and about them. The *lymphatic glands* assume the form of encysted tumours, but these are of a different character. Mr. Freeman has not unaptly compared them to the appearance of the eggs in the abdomen of a hen. They are made up of a white cheesy matter, of different consistence. The substance of which they are composed is, for awhile, of a uniform character, but in process of time they harden, thicken, and, at length, soften at the centre, where a suppurative process is established, and takes its usual course.

Our practice must be very limited if we have not seen various cases of this, and of the tendency which these tumours occasionally



have to amalgamate together, and to form one large uniform or irregular tumour.

The circumstance of principal interest in this case is the enormous size of the tumour. It is supposed to have weighed more than 112 pounds. A similar enlargement occurred a few years ago in a ewe. One of the kidneys weighed thirty-five pounds. It seemed to have absorbed all the nutriment of the frame, for the animal was in a sadly emaciated condition. In this case, however, the horse retained, for aught we hear to the contrary, pretty nearly his former condition.

We regret that Mr. Freeman did not more accurately observe the altered structure of this gland. It might have thrown some valuable light on the nature and progress of disease in various compartments of that complicated organ. Professor Dick, in 1833, favoured us with the history of a case of renal disease and disorganization in a mare. It was more than suspected, during the life of the mare, that disease of these organs existed. On her death there was great disproportionate size of the kidneys. That on the left side was greatly enlarged, while the one on the other side was reduced far below its ordinary dimensions. The diminished kidney had a considerable calculus in its pelvis, and smaller ones in its tubular substance. The tubuli uriniferi were enlarged into cysts, containing a mixture of sand, urine, and pus. The parenchymatous substance of the kidney was rotten, and crumbled down between the fingers.

The left or enlarged kidney was not so much changed in its internal structure—there was calculus, but there was the same mixture of sand, urine, and pus. In one part there was a collection of pus, without any mixture, to the extent of about two ounces.

Professor Rigot gives an account of a horse's kidney which weighed nearly twenty pounds, and which enclosed a considerable quantity of cerebriform matter. A melanotic matter was found in the clots of blood that mingled with the encephaloid substance\*.

The pathological anatomy of the urinary organs, and particularly of the kidneys, is a subject that has been too much neglected among us.

Y.

\* Journ. de Méd. Vét. 1827, p. 301.

# REMARKS ON VARIOUS CONTRIBUTIONS TO "THE VETERINARIAN," AND HISTORY OF VARIOUS STUDS.

By NIMROD.

Dear Sir,—I ALWAYS sit down to this task *con amore*, because the subject matter is congenial with my own taste. But, previously to entering on that announced in my last—the result of my observations on the studs which I saw during my late tour—allow me to offer a word or two on the present position of veterinary science, and on those who practise it. As relates to the former, its best friends cannot desire a more prosperous course than the one now pursued by it, so much strengthened by the fact of its being about to be generally directed to the diseases of cattle, sheep, &c., as well as horses, and which fact was eloquently and forcibly announced by Mr. Spooner, in his oration before the Veterinary Medical Association in November last. It is lamentable to think that the diseases of cattle and sheep have so long been subjected to the ignorant treatment of the country cow-doctor, and of which ignorance alone is not the greatest evil. Unnecessary suffering is added to disease, which will no longer be the case under veterinary skill. I sincerely congratulate the country on this announcement of Mr. Spooner, and trust the barbarous titles of farrier and cow-leach will soon be amongst those which lexicographers define "not in use\*." As regards the present practitioners of the veterinary art, no doubt can be entertained of their having exceeded the expectation of the public in the progress they have made both in science and in practice, and that it will no longer be remarkable, as Pennant says, that whilst England surpasses all European countries in the excellence of its horses, its veterinary schools still remain in their infant state. Amongst the practitioners themselves, however, I should like to see a little more *decided* unanimity of thought and opinion on certain momentous points. For example,—open one volume of THE VETERINARIAN, and we find Professor Coleman extolled for the superior instruction to be de-

\* During the last ten years of my residence in England, my stock of horned cattle amounted to between twenty-five and thirty head. Disease, of course, would occasionally attack them, and their doctor, when sick, was an old labouring man nearly in his dotage, who could neither read nor write. Some of his recipes were truly ridiculous, and yet, strange to say, they oftener hit than missed the mark. His criterion of convalescence was, the state of the nose. How is the cow? he would say: *does she sweat at nose?* If answered in the affirmative, he always exclaimed—"Never heed her now; *she'll do;*" and she generally did "do."

rived from his scientific lectures: open another, and we find Mr. Charles Clark, a London practitioner, plainly insinuating that on two *most material* points—namely, the foot and its shoe, and inflammation of the lungs—his doctrine is pernicious. On the first-named point, indeed, he says “his peculiar views stand foremost in erroneous magnitude,” and that his theory on the treatment of inflamed lungs “has been practised with fatal loss by many a young veterinary surgeon.” Touching this gentleman’s insinuation at the transmutation of Mr. Coleman from a limited practice, in Palsgrave Court, to the office of Professor of the Veterinary Art, I am unable to do more than suppose, that he must have had some pretensions to the honour of being placed at the head of the School, or that honour would not have been conferred upon him; and, perhaps, a more experienced person than himself, *possessed of other requisite qualifications*, could not have been found at that period. His charge against him of the want of experience could not, perhaps, be denied, and, to enable a man to instruct others, experience, we must admit, is a most essential accomplishment. I can give you a tolerable anecdote on this subject, told of one very great man in the medical line, during his noviciate—no less than Sir Hans Sloane, who succeeded Sir Isaac Newton as President of the Royal Society, and who was the founder of the British Museum. On his arrival in London, he waited on Dr. Sydenham, with a letter of recommendation, setting forth his qualifications—“a ripe scholar, a good botanist, a skilful anatomist.” “All mighty fine,” said Sydenham; “but it won’t do. Scholarship—botany—anatomy—*nonsense!* Go to the bed-side, Sir; it is *there* you can learn disease.” But how happened it, that, when experience had been added to Mr. Coleman’s other qualifications, he so long persisted in his erroneous views of the horse’s foot, for erroneous they are as to the thin-heeled shoe, and the frog on the ground? Experience has proved that these views were generally erroneous; and no man who regards the welfare of his horses, or his own safety, now generally adopts them. Then there is dissent again in the profession, on the subject of the foot’s expansion. It is asserted that Mr. Bracy Clark’s seven years’ experiment on the foot of a blood mare is conclusive as to the fact that the foot does not expand and dilate when in action. Your President (see page 121, April 1839) believes such to be the case, whereas Mr. Charles denies it; and Mr. Wallis, who is *surprised* at the denial of Mr. Charles, admits that, “after all, it is not very great.” Now I, in my ignorance, am among the unbelievers here; I am convinced that there is an expansion of the foot, by the mere growth of the organ, under a proper direction; but, without further proof, I cannot admit an elastic expansion or dilatation of the foot in action. To the expan-



sion of the foot by growth, I consider Mr. Turner's plan of the unilateral shoe to be the most natural mechanical agent that can be applied. But why all these doubts as to lateral expansion, &c. &c.? Why is not the matter at once set at rest by well-defined experiments? Is the subject of the foot to be inexhaustible? In my opinion there is a shoe for every foot, a foot for every shoe, and thousands of feet that would have required very little, if any, shoes for many, many purposes, had they never known their use. But after the many instances I have seen of feet going wrong, and becoming dreadfully deformed and diseased, while neither shoes, nor concussion, nor hard roads, had more to do with them than the pen I now hold in my hand, I am well convinced, that, shoe them how we may, we shall always have foot-lameness in England more than in other countries; and, further, that the French system is, for the most part, decidedly less likely to produce lameness than our own is. Excuse the freedom of these remarks. They are the result of my regard for the veterinary profession, and of which, in this respect—I mean dissent on several subjects, as well as conflicting opinions of its professors when under examination by the courts of law—I have more than once been its advocate, when it has been made the subject of conversation in society, in that of sportsmen especially. The eye of the public, the hunting public above all, is upon it; and the more consistent are its proceedings, the more it will increase in their estimation. For example, the uninitiated in these matters are naturally surprised when they turn from Mr. Clark's assertion, founded, as might be supposed, on the soundest pathological knowledge, that the foot of the horse does expand when in action, to that of Mr. Caleb Morgan—equally learned, for all they may know to the contrary—who proves, by the use of calipers and compasses, that it does *not* so expand\*. Some silly fellow, writing under the signature of *Nubia*, in the *Old Sporting Magazine*, has had the hardihood to say, that the expansion takes place to the extent of the eighth of an inch every time the foot comes to the ground; but, as Mr. Morgan happily observes, he must have been *in nubibus*, when he hazarded such an assertion. It appears to me, that, in the succeeding number, this theory is almost annihilated by the sensible and practical observations of Mr. Caleb Morgan.

I consider the extract from the Edinburgh Medical and Surgical Journal, respecting the casting and death of cavalry horses, a subject of much interest, inasmuch as it shews, first, that disease, inflamed lungs especially, is rife in cavalry stables, from the effect of bad

\* "Something should be established beyond dispute," says an anonymous writer in your February Number, 1838. "Coleman would have frog pressure, Clark would have none; and Dick, of Edinburgh, declares it is of no consequence whether the frog has pressure or not."

air; and, next, that the system pursued in them is very inimical to long life. What! the mean age of a cavalry horse only nine and a half years! Why, I never considered a hunter of mine to be in his prime until he had arrived at that age\*.

I now proceed to the mention of what I saw in my late tour that is worthy the notice of veterinarians, or owners and breeders of horses. My first visit was to Badmington, the seat of the Duke of Beaufort, whose stud, of hunters only, exceeded forty. As may be supposed, they are for the most part clever, and, to a certain extent, first-rate; but, taken as a stud, and for hard work with hounds, I give the preference to Lord Segrave's, the amount of which (hunters alone) also exceeded forty. His lordship is not only an excellent judge of the animal, *horse*, but as he purchases, generally, with a view to his own weight, in case they turn up trumps, his horses are almost all weight-carriers. Lord Moreton's was the next stud which came under my observation in this part of the country, and of that I cannot say much. There are, of course, some fine animals among them, to carry himself, for a bad, weak horse would have no chance with his lordship on his back; but, generally speaking, his stables want replenishing. The difficulty, however, of procuring hunters of any power, and in his part of the country especially, is very great. Indeed, it is universally complained of; and I can safely say, that until I went into Leicestershire and Northamptonshire, I did not see one farmer's horse for which I would have given fifty pounds.

But the condition of these studs—there is the point—touching our present business. The duke had seven roasters in his stud, and Lord Segrave eight!—"How is all this to be accounted for?" was the question asked by me, and also put to me. It is true both these studs are summered abroad, and that, no doubt, is *one* reason; but, still, there must be another. "Atmospheric influence," says one. "Undoubtedly," say I; but is not this—the fact being admitted—a strong argument against summering abroad? The Badmington stud is fearfully exposed to this most inciting cause. The horses are turned into the park, where there is very little shelter, and, to get away from the flies, the lake of water is resorted to. Then, again, other horses are turned out with them, and when being caught up for casual purposes—which of course

\* With reference to the utility of ventilation, perhaps the state of affairs in the Dublin Lying-in-Hospital may be adduced as the most singular instance on record. In the space of four years, no less a number than 2944 infants out of 7650 died within the first fortnight after their birth. The hospital was *completely ventilated*, and the proportion of deaths were reduced to 279. Hence, out of the 2944 who had died, 2655 had perished solely from the foulness of the air.

happens every day, if not every hour—the hunters are heated by galloping before they enter on the luxury of the limpid lake. It is lamentable to think of the state of these two noble studs, containing nearly twenty roasters; a thing, I believe, quite unprecedented, although I heard of some in other studs, not thus exposed to such exciting causes. Surely these two noblemen will not persist in the ruinous course of turning their hunters to grass in the summer, but will remember what I stated in *Bell's Life* as to the ranging of the thermometer a few months back—from 25 to 66 degrees in the space of the day and the night—and also what I told them of a brother nobleman, and master of hounds, on this subject. "I have saved £500 a-year," said the Duke of Cleveland, "by not turning my horses out to grass in the summer." Let me also remind them, and all others who may read this paper, once more of this fact. A horse at grass is calculated to eat upwards of 100 lbs. of food in the course of twenty-four hours, not one-tenth part of which is taken up into chyle; and when he gets into the stable, and is put on dry food, his digestion is so weakened that he cannot digest his hay and oats. Hence inflammatory action, and, together with others, directed to those parts whence roaring proceeds. But in the duke's stud I ventured an opinion to his groom, that the hay they eat may have something to do with the numerous roasters in his stable. His Grace having no ploughed land in his own hands, the immense quantity of manure made by his horses and cattle all goes on that which is mown, which of course makes the grass very succulent and rich. Then the quantity mown, being 500 acres, the ricks are made very large (I saw none under 60 tons), and of course the fermentation of the herbage is proportionally great. Indeed, during my visit to Badmington, the hunters were eating hay, which, in my opinion, was only fitting for beasts fattening for the butcher. It was brown from heat, delicious, perhaps, to the palate, certainly fragrant to the nose, but undoubtedly creative of thirst, and consequently predisposing to inflammatory action throughout the whole system; and, if so, why may not the trachea come in for its share? How different was this from the Melton hay? When in Mr. John Moore's stables at that place, in March last, I longed to send the duke's groom a lock of the hay his hunters were eating. It was as bright as the best-saved wheaten straw; not at all matted together, and, although perfectly sweet, had not the over-powering smell which heated hay from rich land never fails to have. In fact, health and condition appeared on the very face of it.

My visit to Badmington having extended to three weeks, it is natural to suppose I had much talk with the duke's head groom, who, having received his education, in part, at the College, is well



qualified for the duties of his office. Among other things to which he directed my attention was the treatment of curbs, those tormenting evils in all hunting stables. "I care nothing for curbs," said he; I have a recipe that stops them *at once*, and when the season is over I fire, if necessary." The use of the seton I found was never applied, either by him or Lord Segrave's or Lord Moreton's groom, for strains, &c.; but he told me of a case of castration, of, I should think, very rare occurrence. "I operated on a yearling colt," said he, "and only found one testicle. At two years old, I extracted another; and at three, another! The colt did well\*." Mr. Richard Weatherstone (for such is this excellent servant's name, although called "Dick" by the family and their friends, as his father was before him, and who is now living at his ease at Badmington) is quite a character in his way; but having both heart and soul in his business, added to nearly twenty years' experience with horses that follow foxhounds, he is no mean authority in practical veterinary science. I observed that he is not a friend to clipping, not more than three of the stud having been subjected to that, in my estimation, unnecessary operation†.

A word more on roaring. Beside the two studs I have here alluded to, instances of horses becoming roarers were given me in other parts of the country, and at Melton, where the best of winter grooming and summering is practised. Sir James Musgrave had a case which he could not account for, and so had Mr. White; and I also heard of some in the Oakley country—Bedfordshire—also difficult to be accounted for. These must be laid to atmospheric agency, shewing the necessity of extraordinary care in guarding against it. During a visit to Mr. Lethbridge, in the last-named county, in March last, I asked the veterinary surgeon who attended his horses if he could account for the prevalence of roaring. He said he had reason to believe it was oftentimes produced by the trachea being injured by the force employed in administering balls; and I am inclined to think that such may occasionally be the case. I forget the name of this veterinary surgeon, who lives at Bedford, but I found that he was no reader of your Journal.

Each succeeding year exhibits some improvement or another in stable economy. The foot-tub, or pail, is one, and I saw it used with the best effect to one of Lord Segrave's horses that I was

\* Having read an account of a partly ossified substance in the scrotum of a horse, in a number of *THE VETERINARIAN* published since this conversation took place, I am induced to suppose, that something of this nature might have occurred in the Badmington colt.

† When remarking on the quality of the Badmington hay, Weatherstone said, that, unfortunately for him, the steward was of opinion that the best hay should be given to the cattle. This is not a solitary instance.

unfortunate enough to thorn, and also to cause him to throw out a curb, in a run over the Gloucestershire Vale. It is deep enough to immerse the leg above the hock, and when soaked in its contents—warm water—for three or four hours, the effect produced in abating inflammation and assuaging pain is very great indeed. And this leads me to a remark on the subject of accidents to hunters and their ailments, which I hope I shall not be thought impertinent in offering to the consideration of the profession. It is this:—I wish some of those who are in practice in the most severe of our hunting counties would now and then give us the result of their treatment of bad cases, from accidents and distress, which come under their consideration in that field, so prolific of both accidents and disease. We have Mr. Percivall's "Complete System of Veterinary Anatomy," and a most admirable work it is. We have the general results of the practice and science of a Youatt, a Goodwin, a Turner, a Clark, a Spooner, a Lawrence, a Mayer, and a Coleman, invaluable, and esteemed such by sportsmen; and nothing is wanting to the development of their art to the non-professional reader and the British sportsman, but a little more plainly demonstrated direction for the treatment of *hunters* when labouring under accident or disease. A veterinary surgeon is not always at hand, at least he may not have it in his power to give immediate attendance; and it too often happens, that it is the "stitch in time" that does the business here. Waiting until the next morning may be fatal both to life and limb.

After an absence of four years, the hunting world presents some new features and changes, as is the case in all other secular affairs. One of the most striking on my last visit to the crack counties, was in the character of the hunter, in which it appeared to me that a devotion to pure blood is occasionally carried too far. At all events, I saw several light men on what are called thoroughbred weeds, which, notwithstanding their elegant form and bang tails, could not, I am positive, go *in front* over a strongly fenced country. By this I mean—and I have alluded to it in my *Midland Tour*—that they would be knocked backwards by the fences, unless they came to them after their strength had been much diminished by horses that had gone over before them. No man respects high breeding in a hunter more than I do, provided it be accompanied by substance; but the blood of Eclipse without it would be useless over some counties—Leicestershire, Rutlandshire, and Northamptonshire especially. Neither do I consider pure blood absolutely essential in hunters for any country, and any pace, with men on their backs who know how to ride them. For example, who sees more of hounds in their work, the season throughout, than Sir James Musgrave does? I do not think he has one

thorough-bred horse in his stud. To the bang tail of a well-bred hunter I have no objection; it is, perhaps, an ornament to him: but I cannot go the length of Mr. Gilpin, in his *Remarks on Forest Scenery*, that the tail of a horse assists him in his action, and, by "balancing his body, prevents his stumbling!" In my opinion, nature, who has given nothing in vain, intended the tail of a horse for two purposes, and for two only,—to add to his beauty in his natural state, and to brush off the flies in the summer heat. Every lover of the animal, however, must rejoice at this change of fashion on one account, and that is, even allowing that part of the dock may be cut off in colthood, the prevalence of the bang or switch tail does away with the practice of docking and re-docking, just to please the eye, as was formerly the case\*.

The condition of the hunters in what may be called the crack counties is really superb, if such an epithet expressive of superlativeness may here be allowed. It is not only extremely superior to that seen in the provincials, but it appears to me to be better and better as time advances. That the Melton horses should look well is not to be marvelled at, from the hands they are in; but I am quite sure that, independently of the forage, which is of the very best description, the water at Melton is of the right sort for horses.

Having alluded to forage, let me say a word touching a book lately noticed in your pages—Professor Stewart's "*Stable Economy*," in which he treats of food, and with much truth, as well as ability. But, after all, good hay, oats, and beans, continue to be the general food of English horses, and such will they ever continue to be, because they (oats and beans, at all events) have stood the test of some centuries, and experience has proved them to be the best that can be grown for horses that work hard and travel quickly. All the other varieties mentioned by Mr. Stewart, if not falling under the denomination of quackery, will never come into common use; and the recommendation of Arthur Young, or Cobbet, both of them quacks on subjects of this nature, goes for nothing. Horses may, I believe, be taught to eat any thing, from a beef-steak to turtle-soup; but there is nothing so natural as the common food generally adopted in Great Britain.

I wish Mr. Stewart had said something of wheaten straw, the use of which, for certain work, I am much inclined to think well of. I find that the French have the term, a horse of straw, i. e. one that eats straw—to denote a good one. When he says milk is occasionally given to stallions in the covering season, he states what is fact. I saw it given, with the best effect, to the celebrated

\* The wisdom of antiquity decides against the practice of docking and cropping horses, inasmuch as no one instance can be found, in the remains of Grecian or Roman sculpture, of a short dock or a cropt ear.



Reubens, who was very slack in performing his duty to all mares not grey. When he stood at Eaton Hall, Cheshire, the seat of the Marquis of Westminster, I had a mare with him, but he would not serve her until a grey pony was brought in his sight. Mr. Stewart also speaks of the danger of giving eggs to stallions *unbroken*. Master Betty, or Young Roscius as he was called, was killed by one, within a mile of my house, when I resided in Shropshire. Horses are said to get fat upon milk *only*; Mr. Stewart states the fact on the authority of Denham's Travels in Africa. These "travellers" are much given to "bounce\*."

I should like to hear that the stethoscope has been found to answer the end of ascertaining pregnancy in the mare; and at what period of her gestation it can be made available to discover the beating of the foetal heart. Much credit is due to Mr. Baker for making the attempt, although it appears to be one of no little difficulty, by reason of the mode in which the instrument must be applied. It would be a great point gained to breeders, could they ascertain, *at an early period after copulation*, whether or not a mare was with foal, as, if not, she might be teased till she took another stallion, to which she might stand, although she did not stand to the first. With racing mares, it would be of no avail—any further than to satisfy the hopes of their owners, and to increase the care taken of them in their paddocks when ascertained to be pregnant, because it is essential that they should foal early; but with half-bred and cart-stock the proof of the stethoscope would be of the highest importance. A short time before I left England, I ordered a mare of mine to be shot, supposing her not to be with foal, and thinking her not worth keeping on, another year, on account of her age. A neighbouring farmer volunteering to keep her on barley-straw at 1s. 6d. per week, I gave her a reprieve, and, in six weeks, she produced a colt that sold at my sale for seventeen guineas, at a year old. To the eye she had not the least appearance of being pregnant. She was a half-bred mare, but a noted trotter; and, when in her prime, would have been purchased by George the Fourth, when Prince Regent, for his own riding, but for the fault of being difficult to mount. I sincerely wish success may have attended this experiment, which created much interest in the minds of such of our sporting men as heard or read of it.

I always turn with pleasure to any thing from the pen of Mr. Spooner. In the December Number, 1837, he has a short paper on the poisonous effect of the yew tree; but of which, it appears, doubts had been expressed by some members of the profession. I can give you an instance in corroboration of its deadly effects,

\* In your notice of the Professor's book, the name of Hoare is given for Warde, the late father of the field.

from my own observation. Being on a visit to the late George Ackers, Esq., of coaching celebrity, when he rented Lord Falmouth's seat, at Woolhampton, on the Bath and London road, I heard him give orders to his coachman, as he was about to mount his box for a drive, to turn his son's (the present Mr. Ackers) pony into the paddock. On our return, within the space of three hours, the coachman told us the pony was dead. "What killed him?" was the question. "I know not," said the coachman; "but, seeing him stagger, I fetched him from the paddock, and he dropped dead as soon as he reached his stall." I entered the paddock, and, at once, saw the cause of his death. He had eaten some *live* branches of a yew tree, and about as much of them as would fill the crown of a hat was found in his stomach. I lay stress on the epithet "*live*," because it is rather generally believed, that, to cause death, the branches eaten must be dead, or much withered. Another proof, however, that live yew is poison, may be gathered from the fact, of some hundreds of the Duke of Northumberland's deer, in the North, having been poisoned by partaking of a live yew-hedge, in a deep snow; and, perhaps, the poisonous effects of the branches of this tree may be *one* reason for its having been generally planted in churchyards.

I shall conclude this paper with a few remarks upon the progress our neighbours, the French, are making in racing. At Chantilly meeting, in May last, at which I officiated as judge, there were sixty-three race-horses in the town, and the sum of £1716 run for, in the three days. There are now upwards of twenty race meetings in France and Belgium, and the *Racing Calendar* for 1838, published in Paris, gives the names of 251 owners of race-horses in France and Belgium! Then the spirit with which many of the French nobility and gentlemen enter into the thing, is somewhat beyond expectation. On one race at Chantilly upwards of £12,000 was depending, and M. Lupin gave very nearly 2000 guineas for three brood mares (Fleur de Lis, Wings, and Mouse), at the Hampton Court sale, the produce of which will come to the post, next year. The French Government itself is at length on the turf, having several clever colts and fillies now in training, under the care of Thomas Robinson, brother to the celebrated Newmarket jockey of that name. To shew the spirit with which they are proceeding, the person at the head of the establishment told me they would give 2000 guineas for a good, tried stallion! Their prejudices are also fast wearing away, although not quite gone, as the following fact will shew. The year before last, at Newmarket, I purchased Mendicant, by Tramp, out of Lunacy, for the Prince of Moskowa, and he won thirteen races at fifteen starts in France, within the year, besides running two severe races, at heats, in

England. Being six years old now, and consequently shut out of the good things, he was offered to the French Government as a stallion, but was objected to because he is a chestnut, and has not a handsome head.

NIMROD.

P.S.—Since the above was written, I have seen the death of Mr. Coleman in the *Times* paper. I trust I have said nothing prejudicial to the memory of a highly talented and worthy gentleman, as he has always been represented to me; but as one who, in his zeal, may have carried some points beyond the test of experience.

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### TETANUS v. WOURALI.

MOST of our readers are aware that some very interesting experiments have lately been made with the wourali poison. The medical men of Nottingham, much to their credit, have taken the lead.

The wourali poison, according to Mr. Waterton, is made by the Macoashe Indians from a vine called wourali, several unknown vegetables, two species of ants, Indian pepper, and the pounded fangs of two species of venomous snakes. These are all boiled together until they are reduced to the form of an extract. An ox that was wounded by an arrow dipped in this poison died in twenty-five minutes.

Mr. Morton, in his valuable essay on "The Agency and Method of detecting the more energetic Poisons," gives a short account of it, and in the course of the debate he read to the Association a record of the experiments of Professor Sewell on the power of the wourali poison in cases of tetanus. The subjects of the experiments were a horse and an ass. They both were labouring under tetanus, and the ass exhibited it in its severest form. They were both destroyed by the poison. In ten minutes after apparent death was produced artificial respiration was commenced, and kept up about four hours, when reanimation took place. The horse got up; he appeared to be perfectly recovered, and eagerly partook of corn and hay. It would appear that he was permitted to take too much of these substances, for over-distention of the stomach took place, and he died on the following day, without the slightest recurrence of the tetanic symptoms.

The ass, probably exhausted by the previous violence of the disease, although reanimation took place in him, yet never recovered so far as to be able to rise, and he died twenty-seven hours after the exhibition of the poison, but without the return of a single



symptom of tetanus. These facts attracted a considerable degree of public attention.

A poor fellow died lately of hydrophobia at Nottingham. It was wished to try the effect of the wourali poison upon him, and Mr. Waterton, who resides near Wakefield, was sent for. He immediately started, but the patient was dead before he could arrive. It was determined, however, to put the wourali to the test in the next case of hydrophobia, or of tetanus, that might occur. In the intermediate time a few medical men instituted some farther experiments on the wourali, that they might be able to proceed more satisfactorily when the hour of trial arrived.

A great number of medical gentlemen attended to witness the result. A large dog was brought in, and wounded in the side by a spearhead covered with the poison. In about a quarter of an hour the circulation was much increased—the pulse rising to 130 in a minute, and the action of the heart being irregular. At thirty-six minutes the poor fellow was unable to stand, and convulsive twitchings stole over his whole frame. In fifty-two minutes he ceased to breath, but the heart continued its action. In a few minutes afterwards the chest was opened, and the heart irritated by the end of a scalpel. In a very short time the irritability altogether ceased.

The subject of the second experiment was an ass. Artificial respiration was here had recourse to, and was kept up during the whole of the time that the animal continued under the influence of the poison, so that when its power had ceased the ass would resume its natural respiration, and the artificial means be discontinued, thus enabling it to survive the powerful effect of this most deadly poison. The arrow head was inserted a few minutes after nine. In a quarter of an hour the heart began to beat irregularly, and the respirations were about fifteen in a minute, the pulse was accelerated, and the pupils dilated. In half an hour the breathing had become difficult and irregular, and the pulse had risen to 104. A moment after this, the animal fell as if dead, and the pulse could not be detected. An opening was immediately made into the trachea—the bellows introduced, and the usual process persevered in for seven hours and a half, at which time the animal commenced breathing by its own efforts. The patient gradually improved, and presently began to eat, almost as if nothing had happened.

A third experiment was made on a younger and stronger ass, on another day. A less quantity of the poison was used. The patient suffered but little, and continued to eat for thirty-four minutes, when the effect became evident, and he fell senseless and motionless. Artificial respiration was carried on for two hours, and then the natural respiration commenced. The ass was so far

recovered at the end of six hours as to get up and stand by itself. This experiment was more satisfactory than the previous ones, and the animal was restored much sooner after having a smaller dose of the poison administered.

The result of these experiments was exceedingly gratifying, and the gentlemen who conducted them resolved to avail themselves of the first opportunity to try them in tetanus or rabies, believing the *modus operandi* of the poison to be to suspend animation, and so far to exhaust the powers of the body as to turn out or to destroy the hydrophobic poison.

A horse fell, and broke both knees, so as to expose the synovial cavity. He was properly attended, but in process of time, as might be expected, tetanus appeared. It was immediately determined to have recourse to the wourali poison. Most of the medical gentlemen in Nottingham, and its neighbourhood, were present, and our veterinary friends, Messrs. Taylor and Cuney. Mr. Greeves, a truly scientific practitioner of human medicine, and whom I am proud to call my friend, took very careful notes of the proceedings. He has permitted me to have a sight of them, and I hasten to present my veterinary brethren with an account of so interesting an experiment.

Before the commencement of the proceedings the pulse was 45, and the respiration 48 after having walked to the place of experimenting, and during a paroxysm.

At 12 minutes past 3 in the afternoon one point imbued with the wourali poison was selected.

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|-------------|---|
| 15 minutes. | The incision was made.  |
| 22 ditto.   | The pulse 44.   |
| 24 ditto.   | The patient sighed.   |
| 27 ditto.   | The respiration was irregular, and more frequent.   |
| 29 ditto.   | The pulse still remains at 44.  |
| 30 ditto.   | The animal is uneasy, and is continually moving about. The respiration quicker.   |
| 35 ditto.   | The head droops, the countenance is depressed, and there is a sleepiness of the eyes. The respiration and the pulse both 42. The trachea was opened for future operation.   |
| 46 ditto.   | Sighing frequently, and the respiration more irregular.   |
| 48 ditto.   | The respiration is 55, and laborious. The pulse 48, irregular, and weaker.  |
| 52 ditto.   | There is a peculiar sleepy expression of the countenance. The sight is imperfect or gone; he does not wink when straws or white paper are held near the eye. The spasm of the jaws is relaxed, and they have as much freedom as ever. |

56 minutes. The pulse 40, feeble, but no fluttering. The respirations 50.

At 4, P.M. The pulse more accelerated, and the respirations 48.  
7 m. past 4. He fell.

9 ditto. The pupils dilated—the tail still trembling.

11 ditto. Pulse 52. Respirations 44. He has for a short time been constantly drawing up his hind leg convulsively.

14 ditto. Both the pulse and the respirations 50. The pulse is full and strong. There is a tetanic spasm of the whole body. The jaw as firmly fixed as ever.

18 ditto. Feeble tetanic spasms continue. The pulse 48, strong as before. The respirations have risen to 63.

24 ditto. Respirations 70.

31 ditto. The respirations have sunk to 12 per minute. The eyelids are contracting violently—also spasmodic twitchings of the nostrils—less spasm of the jaw. The pulse 40, intermittent, yet full and strong.

33 ditto. The pulse 32, and intermittent. The respiration quicker—more heaving of the flanks—twitchings of the face.

35 ditto. The respirations 20, long and deep. The pulse 28. Less sensibility of the whole surface. The masseter muscle flaccid.

37 ditto. The respiration strangely increased—absolutely 60. The pulse 40, full and strong.

42 ditto. Decidedly better—the pulse fuller—the respirations fewer, although still too quick—the retina now quite sensible to the impression of surrounding objects—the masseter muscle still relaxed.

51 ditto. The respirations have again quickened—the jaw is almost set, and the sphincter ani is violently contracted.

56 ditto. A violent and universal tetanic spasm.

2 m. after 5. The pulse is 44, and the respirations no fewer than 65. Another point armed with the wourali poison was introduced at the inside of the thigh.

13 ditto. The pulse is 42, but the respirations are dreadful—they are no fewer than 76.

15 ditto. Another violent and universal tetanic spasm. The pulse is 38, and the respiration is most laborious.



17 minutes. Another, but not so violent spasm. The respirations are 88.

25 ditto. The pulse 44. Efforts at vomiting.

33 ditto. Another violent tetanic spasm.

43 ditto. Again a dreadful spasm—the pulse 42, but the respirations 80.

At 6 o'clock more of the wourali was applied. The pulse 44, the respiration as before.

12 m. past 6. The pulse 44, and the respirations 70. The animal is getting decidedly feebler, and sighs occasionally.

27 ditto. The respirations 60, and the pulse 46. The spasms slighter, and at longer intervals.

40 ditto. Pulse 46, and full, and of the same strength. Occasional efforts to swallow, and the jaw more relaxed.

46 ditto. The jaw still laxer—the tail motionless—mouth moist. Respirations 52.

51 ditto. Respirations 48. The jaw can be opened nearly two inches.

Seven o'clock. Very little difference.

22 m. after 7. Pulse 40. Respirations again diminished to 28.

30 ditto. Pulse 36. Respirations 56—double what they were eight minutes ago.

38 ditto. Pulse 38. Respirations 60, yet the muscular system considerably more relaxed.

45 ditto. Respiration still 60. Our patient has attempted to get at a little hay, when placed against his mouth, by moving about the upper and lower lips, and, very slightly, the lower jaw. Some sense of smell evidently remains. He moves about the head in following and endeavouring to get hold of the hay and grass. There is a considerable alteration in the symptoms. The muscles are more flaccid, and the muscular system generally is returning to its natural state, and we began to hope that we were actually about to effect a cure by means of our wourali.

In a very few minutes afterwards every symptom of tetanus returned, even in a more aggravated form. It was painful to look at the countenance of the poor fellow, for it plainly indicated that he was suffering the most horrible torture. Whether the disease would have been ultimately conquered by the exhibition of another, and still another portion of the wourali poison, it is impossible to say: at all events, life would have been dearly purchased at the expense of so much agony.

The gentlemen who were concerned in the conducting the ex-

periment would not put this to the hazard. They waited a little, and, the disease assuming a still more aggravated character, they ordered the poor fellow to be destroyed.

Y.

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## ON THE COMPARATIVE DISEASES & LAMENESSES OF FRENCH AND ENGLISH HORSES.

*By Mr. C. J. DAWSON, V.S., Boulogne-sur-Mer.*

Sir,—IN THE VETERINARIAN for August, which, owing to some delay, I have only just received, I find a letter from that clever writer Nimrod, "On the Comparative Diseases and Lamenesses of the French and English Horses."

I feel somewhat diffident in commenting on a communication from a man having had the experience of Nimrod, coupled with his acknowledged talents, and the interest he takes in all horse matters; but, being desirous of arriving at "facts" (which desire, I am sure, actuates every well-wisher to the profession), I am induced to trouble you on the present occasion.

In speaking of the foot, your correspondent says, "I see no corns in France, and, what is more extraordinary, hear of none." Now this astonishes me; for I really think, out of every six French horses that come to my forge, four of them have corns. It is true, that the French smiths know little about the disease; but their want of knowledge does not alter the fact of their horses being subject to corns.

An instance of this occurred to me the other day in my practice here. I was sent for to see a horse, belonging to one of the diligence proprietors. I found him very lame, and in great pain; so much so that he was down. Upon examination, I felt convinced that the mischief lay in the foot, and I mentioned my opinion to the owner, who, however, differed from me, and imagined it to be a shoulder-case. I begged of him to allow me to send for my man, and to have the shoe taken off, to which he consented.

The shoe being removed, we found him exceedingly sensitive in the seat of corn, and, after paring for some time—the sole being as thick and hard as a board—down we came upon the evil, and to the surprise of the owner, who had been watching the whole of the operation, we evacuated a considerable quantity of pus. Now, this horse had been lame three weeks, evidently from the corn which had gone on to suppuration, without the French smith being aware that the animal had any thing of the sort.

But, allowing that he had been in possession of the seat of the disease, I believe that his want of skill in paring the foot, and the horrid tools made use of for the purpose, would prevent the possibility of his giving relief. The smith in question is decidedly the best workman I have seen among the French.

With regard to the French system of shoeing generally, I do not disapprove of it for *heavy* horses. But how long would it answer for horses that go the pace of our English mail coach and others, where the feet are rendered *brittle* and *bad* from the concussion of the hard roads? For my own part, I do not believe that they would keep the shoes on a week. It is with horses that go the pace, which pace is the cause of diseased horn, that the art of shoeing is tested. I admit lamenesses arising from their nailing are not frequent. Seldom, also, are they found in cart and other horses shod far in the country in England. The reason is obvious,—it is from the immense quantity of horn with which the feet of all *naturally slow* horses are covered, thereby rendering the liability to injury from nails much less. I will not, Mr. Editor, trespass further upon your valuable columns, but I think that you will give admission to these few remarks.

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[We do most readily and thankfully give admission to these remarks, and we entreat Mr. Dawson to enter into and follow up this subject, "The Comparative Lamenesses and Diseases of French and English Horses." His situation, his experience, and his talent, well qualify him for the task. Truth is our common object, and there are few subjects on which it would be more interesting and important to arrive at the truth.—Y.]

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## THE PRESENT EPIDEMIC AMONG CATTLE.

THE Editor is indebted to the kindness of Mr. Hill, V.S., of Islington Green, for the following sketch of an epidemic which is now exceedingly prevalent in the dairies in the neighbourhood of the metropolis. It is a hasty sketch, for this portion of our Journal ought to have been at the printers when Mr. Hill, at our request, favoured us with a call. He has the superintendence of a dairy of nearly 700 cows.

A fortnight ago a large field was mowed for the use of the cows. Six of them were attacked with a singular disease, the symptoms of which were precisely the same. The membrane of the whole of the mouth was in a state of inflammation and vesication. The tongue was involved, but the most extensive and annoying vesica-



tion was between the under lip and the gums. In two out of the six it extended over the muzzle to the nostrils. This would necessarily cause a great deal of pain, and the poor animals were totally unable to masticate their food. In the two whose tongue was the principal seat of the disease, the membrane of the tongue completely peeled off. A peculiar symptom accompanied this—a continual catching up and shaking of one or the other of the hind legs.

Two out of the six suffered so much pain that they became altogether furious. They broke away, and ran into the shoot or receptacle for the urine or dung, and, in getting them out, their horns were broken. They were, however, penned up, and, as soon as they could be approached, he took from them a considerable quantity of blood. This was all that was wanted. They became quiet, their mouths got well, and there was an end of the matter with regard to them.

Mr. Rhodes, the owner, was a little alarmed about this. He, and Mr. Hill agreed with him, was at first inclined to attribute the disease to some poisonous herbage in the new field. Mr. Morton entertained the same opinion, and yet the suspicion of its being of an epidemic character was not absent from their minds. Five or six days afterwards this was plain enough. No fewer than twenty of the cows became more or less lame. Two days had scarcely passed ere that twenty had increased to more than two hundred. There was some discharge from the nostrils, but no vesication of the mouth. The grievance lay in the foot, and particularly in the cartilago-ligamentous substance which forms the heels. An enlargement appeared immediately at the posterior division of the foot, and at the separation between the heels; it was hot and tender: a vesicle followed evidently filled with serum, and, if not lanced, it burst, and a serous fluid exuded. The after state of the case, and the after treatment, depended on the opening of this vesicle. If the fluid was liberated in time, one dressing with the caustic that will presently be named was sufficient; but if that had been neglected, the fluid insinuated itself between the hoof and sensible laminae, and burst out at other parts of the coronet, or the hoof dropped off. In addition to this, the interdigital membrane became one mass of excoriation or ulceration.

The effect of poultices was tried at first, but they were feeble remedies in such a case. The dressing which was most useful,—which, in fact, never failed ultimately, and, applied in time, arrested the disease at once,—consisted of equal parts of muriatic acid and tincture of myrrh, applied by means of a brush or feather—the animal being placed in a dry yard, and the foot kept from all accidental moisture by means of triangular pieces of cloth, secured by list, and not by tarred twine.

A very few days elapsed before the 200 had increased to more than 500, and it was as much as all the hands upon the place could do to apply the dressings. Not a single animal was lost, although many were severely lame. In the whole, there were not more than six cases of disease in the *fore feet*, and that we attributed to the fore feet occasionally standing in places that had been occupied by the hind ones.

The disease now assumed a different character in those cases in which it had not been energetically treated at first. Garget appeared in one or two of the quarters—not, except in very few cases, assuming the ulcerative character, but evidenced by considerable tumefaction, hardness, and pain. The loss of milk became very considerable. In the establishment on which he attended it averaged at least eighty gallons a-day, or a quart a cow, supposing the number of animals that were affected at the same time to be more than 300. In other establishments he understood the garget was more frequent and more obstinate than in his; and he had no doubt that a very great number of cows in the vicinity of the metropolis would be fattened and sold on account of the continuance of garget, and the diminution of milk.

He tried the iodine ointment in these inflammations of the udder, but it only added fuel to fire, and strangely increased the evil. A strong chamomile decoction, in the proportion of a pound or more of the flowers to a gallon of water, he found most useful. It speedily abated the inflammation and dispersed the tumour.

The commencement of the disease is scarcely to be mistaken: the pain which the animal evinces by holding up and shaking one of the hind legs is a marked symptom; and from which the vesicle at the heel, a certain degree of soreness before, and a slight tumefaction of the whole of the coronets, are seldom absent. The cow is very easily purged under this complaint: three ounces of sulphur will usually suffice, while the common pound dose of Epsom salts would produce superpurgation. The digestive organs do not appear to be at all affected.

The Editor again expresses his thankfulness for the information which he gained from this conversation with Mr. Hill, and he entreats all those who may, unfortunately, have the opportunity of studying the character of the epidemic, to furnish him with the result of their experience. This is one of the valuable purposes to which our periodical should be applied.

An old ulceration of the instep, to which the Editor has been long subject, has increased its extent and its torture within a few days to a degree which almost incapacitates him for mental exertion. Is this connected with the same atmospheric influence?

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## THE VETERINARIAN, SEPTEMBER 1, 1839.

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*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

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MANY of our readers, through the medium of the Mark Lane Express, have been made acquainted with the proceedings of the Governors of the Royal Veterinary College since our last report: but as that paper may not have reached all our subscribers, and as it seems advisable that our Periodical, for the satisfaction of the present generation and the information of posterity, should contain a detailed account of all the circumstances connected with the changes which have been effected in that Institution, we will repeat the substance of what took place on the 30th of last July.

Mr. Sewell was appointed chief Professor and Director of the Institution, and Superintendent of the Clinical Department of the Hospital. His lectures are not to be confined, like those of the late Professor, to the horse, but are to embrace the medical and surgical treatment of every domesticated animal.

Mr. Spooner is the Assistant Professor, and joint Superintendent of the Clinical Department, and his lectures will comprise the anatomy and physiology of all domesticated animals.

To these noble improvements is added a third. Mr. Morton, to whose ardent zeal and full competency every student and every practitioner will bear eager testimony, is appointed Lecturer on Veterinary Pharmacy and the *Materia Medica*.

The time of the student's residence at the College is extended to eighteen months, and the regularity of that attendance will be strictly enforced.

The candidate for examination must be at least twenty years of age when he presents himself at the examiners' board.

The initiatory fee is twenty guineas, which will give to every pupil a right of admission to all the regular and public lectures of the Institution.

We have received several communications from our friends in the country. Almost all of them express much pleasure and thankfulness in the contemplation of some of the evident and va-



luable improvements which have been effected. They rejoice that cattle and sheep, and swine and dogs, and, in fact, all of our domestic animals, will be admitted as patients at the Veterinary College. They rejoice in it, as cementing the bonds of amity between the Southern Veterinary Institution and the English Agricultural Society; and also because the student may now, for the first time, go to his practice honestly prepared for the discharge of his duty. They are doubtful, however, one and all, whether, according to the present arrangement, this can be fairly carried out. All the diseases of all the domesticated animals to be taught by one man!—it seems to be a moral impossibility. The horse, the ox, and the hog, what little analogy is there between either their physiology or their diseases? In scarcely any case,—perhaps it might be better said in no case,—can that which is known of the one be fully applicable to the treatment of the other. They could have wished that this point had been deeply considered, or that it be so ere the ensuing session commences; but, thankful for other boons, they will wait to see the working of the new curriculum.

With regard to the appointment of Professor Spooner, there is not a dissentient voice, whether the importance of the Professorship or the competency of the Professor are considered. Had they heard the concluding paragraph of his speech at the late dinner, they would have, indeed, exulted. “I will confess thus much,” said the Professor, “that I deeply feel the responsibility of the situation in which I have the honour to be placed, and will ever exert my utmost endeavours to fulfil the expectations of the Governors of the Institution, to merit the esteem and good-fellowship of those with whom I shall act, and to obtain the confidence and support of every well-thinking member of the profession. Failing in this, I will never consent to hold a situation where I can only be considered as a clog to the advancement of science, and a mark to be shot at by all who are anxious for its welfare.” This is noble! Long may he live to carry out all the purposes intended to be effected by the Assistant-Professor, according to the new arrangements at the Veterinary College!—and, far more than these, he has the ability and the determination to effect.

It is a wide field which he will have to occupy, and much labour of body and of mind will the proper occupancy of it exact. We

acknowledge that the different divisions of it are harmoniously and beautifully connected with each other, but still the various animals which will come under his observation are not, to the degree which the talented Professor of the Edinburgh School supposes, "formed on one general plan, and the analogy which exists serving to assist rather than retard the examination of the various subjects." The zoologist might legitimately trace these analogies, but the business of the *surgical anatomist* is to discover the points of difference leading to a different discharge of the most simple functions, and—the all-important point in this case—dissimilar manifestations of disease, and difference of medical treatment which would scarcely be deemed possible. The principles of health and disease are few and simple. It is in the working out of these principles, governed by a thousand idiosyncrasies, that the difficulty consists. Depend upon it, the Assistant-Professor will have enough to do; but, as the chairman at the late meeting told him, "he is sound in wind and limb—his heart is in the right place," and he will do his duty.

The appointment of—the third Professor, it should have been, and will be, ere long, for the importance of the subjects on which he will have to lecture, and the talent of the man, will demand it—a Lecturer on Veterinary Pharmacy and the *Materia Medica* cannot fail of giving universal satisfaction. His duties also will be considerably extended, for his Pharmacy and his *Materia Medica* must now include every medicine that is used in every disease of every domesticated animal.

It will, at no great distance of time, be considered part of the duty of this teacher or professor to prepare the pupil for the new inquiries to which his mind will be directed, ere he can mingle creditably and usefully with the well-educated farmer. He will be taught the first principles of botany, and agricultural chemistry, and the nutritive principle of plants, and the chemical composition of soils and manures. Here will be a new and a wide expanse of study. A professor capable of thus directing the mind of the student will be indispensable in an institution that calls itself a school of veterinary instruction.

A new and a very important regulation is the age of the candidate for a diploma. Here was a flagrant error in the management of the Institution. In former times many a mere boy was dubbed

a veterinary surgeon, to the manifest disgrace of the profession. At nineteen, at eighteen, and at seventeen, they have been sent into the country licensed to destroy the quadruped property which might be entrusted to their care.

The time of residence at the College is extended to eighteen months, and it is intimated that the regularity of that attendance will be more strictly enforced. Here, too, there was a need of reform. How many seven and five, and four and three months' students could we name. At the meeting, so long an account of which has been given in this number of our Journal, Professor Dick complains of his pupils being compelled to attend at the Southern Veterinary School six times as long as they formerly were. With regard to a youth whose father was not a veterinary surgeon, and who had not been apprenticed to a veterinary surgeon, it is an excellent regulation which forces on him an attendance of eighteen months. If we found any fault, it would be that the eighteen were not twenty-four; but, as a general rule, it is liable to exception. It is hard to compel the son of a veterinary surgeon—or an apprentice of three years' standing—to protract his stay at the College so long. We will not say that his time is thrown away there—he would, or he might, doubtless improve during that period of residence; but the expense might be a serious inconvenience to him, or he might not be able to avail himself of some advantageous opportunities of going into practice.

Let the raw student stay his full time; but let nine, or twelve months at most, suffice for him who has come to the institution more than half prepared. Many of the certificated pupils of the Northern and Southern Schools—many a young man, ardent in his pursuit of knowledge, might wish to go from the one school to the other, and to gather the cream of the instruction at both of them. Now, it would be manifestly hard if, after having staid the full time at one, and shewn that he had well disposed of that time by having obtained with honour the certificate of that school, he should be compelled to stay the whole eighteen months at the other before he can compete for a similar distinction there. There should be an understanding on this point between the two schools, and the regular attendance of one whole session at the second school should be deemed sufficient, on the production of the diploma from the first.



This, however, may be a matter of future, but not far distant arrangement; and we are unwilling to press it after the enumeration of the valuable improvements that have been effected; but there is that which admits of no delay—the introductory fee of the pupil. A session having commenced, and several payments of a certain sum having been made, it will not be easy afterwards to effect a change: and speaking most truly the sentiments of every practitioner but two on this point, and following up their bidding, we entreat the Governors to pause and reconsider one step which they have taken.

Our gratitude is unfeigned for other things that they have done. Let them complete the obligation by granting our prayer here, or, at least, by giving it the deepest consideration. They have determined that the initiatory fee shall be twenty guineas, and this they have divided, in certain proportions, among the professors. The appointment of a Professor of Comparative Anatomy and Physiology, and the riper age and more extended residence demanded of the pupils,—these are most important and most invaluable improvements. Let them not be diminished, or set completely aside! The expenses of the pupils at the Veterinary College, so far as it concerns the fees and circumstances connected with them, were nearly double twenty guineas. Was there any complaint of burdensome expense? Was there any lack of pupils? Was not the school, generally speaking, full? Can a single circumstance be stated to induce the dangerous experiment of a diminution of the fee? Is it creditable to the Institution? Will it not inundate the College with young men from the lower grades of society—the smith, the groom, the helper? Will it not thus inflict a deadly blow on the respectability of the profession? Will it not rend asunder those friendly associations so honourable and so delightful between the veterinary surgeon and the practitioner of human medicine? Will not the disgrace of this cheap education, cheap, indeed, compared with that of the medical student, follow the cavalry veterinary surgeon to his regimental mess? Will not his justly proud and honourable spirit quail under the indignity. In the name of the united profession, we entreat the Governors of the College to take this into serious and deliberate consideration ere the first session of the improved school commences.

We propose—respectfully, but with a deep sense of the justice of our prayer—a compromise. Make the initiatory fee thirty guineas! You do nothing wrong by that. You still place the future student in a better situation than his predecessors. You leave to no human being the slightest room for complaint; and you avert a blow, the surest, the most destructive that could be aimed at the respectability of the veterinary profession.

Make the fee thirty guineas! You will want the money. From what fund are the subjects for dissection to be supplied?—from

what fund the rewards to the deserving student?—from what fund the salary of your new Professor,—for you soon must have one, and that for the simple reason, that *there is not the man upon earth who, single-handed, can do justice to the pathology of the horse, cattle, sheep, swine, and the other domesticated animals.* Some essential portion, or the whole, must be grossly neglected. We speak strongly, but we speak respectfully, and not unmindful of what you have already done.

We scarcely apologize for the long and somewhat egotistical account of the late dinner. It places in the strongest point of view the good, the honourable feeling which now prevails among the practitioners of the veterinary art. What can the governors have to fear from granting the prayer of such men? Can they, will they hesitate?

Will the gentleman who communicated to the author of "The Obligation and Extent of Humanity," certain information respecting the fate of the turf horses, Ambo and Hit or Miss, in the neighbourhood of Shrewsbury, favour Mr. Youatt with his address by the post immediately after the receipt of this Journal?

## REVIEW.

*Quid sit pulchrum, quid turpe, quid utile, quid non.*—HOR.

*Cattle Pathology, or a Treatise on the Pathology of the Ox.* By P. B. GELLÉ, Professor of the Royal Veterinary School at Toulouse. Huzard, Paris, 1839.

We continue our abridgment of Professor Gellé's work.

### *Maladies of the Lips.*

Although the lips are exposed to the first impression of every thing taken into the mouth, it is comparatively seldom that there is a lesion or inflammation of them. The principal danger is from the bites of vipers in hot weather, and in the neighbourhood of copses. Scarifications, and the frequent application of the hydrochlorate of ammonia to the wound, and the administration of it internally in doses of an ounce in a pint and a half of water, will prevent all danger.

Cancerous ulcers, involving the lips and maxillary bones, and producing extensive caries of these bones, will be hereafter treated of.

### *Dentition, and the Teeth generally.*

The process of dentition, and the protrusion of the teeth, have considerable influence on the crises of various disorders, and are particularly connected with certain swellings and other diseases of the head. They continue until the animal is between five and six

years old. The period of the protrusion of certain of the teeth has been ascertained with considerable certainty, and the ages of ten, twenty, twenty-four, thirty, and thirty-four months, and four, five, and six years, have been marked as periods at which disease has originated from or been aggravated by dentition. The veterinarian should at those periods particularly examine the mouth, in order to see whether many a disease, that would not otherwise excite suspicion, may not arise from or be connected with dentition.

The pathological effects of dentition are not so evident or so dangerous in the ox as in the horse, possibly on account of the smaller number of teeth, or the roots of them not penetrating so deeply into the jaw. Nevertheless, the cutting of the teeth in the ox, as well as in the horse, is attended by loss of appetite and redness and heat of the mouth—the head hangs down,—the eyes weep, and sometimes there is cough, coryza, and diarrhœa. The veterinarian ought to be aware of this, or he will sometimes compromise his reputation by an erroneous diagnosis. I have seen persons, careless or deficient in medical tact, bleed and physic an ox, supposing that they were combatting bronchitis, or gastro-enteritis; and, after two or three days, the proprietor or the cowherd has found one or two molar teeth in the manger. The disease has immediately disappeared, and a laugh has been raised at the expense of the veterinarian. A little gruel, or tender grass, or mash, will generally be sufficient in cases of the most painful and difficult dentition. Sometimes a kind of bit, consisting of a stout little bag filled with bran, vinegar, and honey, may give relief when the inflammation of the mouth is very great.

The irregular wearing of the teeth is a circumstance that may be expected, considering how many hours in every day they are employed in the process of mastication. The Professor gives an interesting case of this. An ox, seven years old, had been hard worked, and was very much out of condition. The proprietor said that he had been getting thin during the last two months—that he had eaten and ruminated much less than he was used to do—that, during rumination there was an abundant flow of saliva mixed with portions of imperfectly triturated food—that he was subject to frequent intermittent meteorizations of the paunch, but which soon subsided.

The first impression on the mind of the surgeon was that there was chronic disease of the fourth stomach; but the pulse was natural, the fæces announced that the digestion was good, and the animal did not cough. On opening the mouth of the beast, the Professor was struck with the loathsome smell of the expired air, and which caused him to think that there were ulcers in the cavity of the mouth. He cast the ox, and fixed his head in a somewhat elevated position, and he kept the mouth open by means of a kind of balling-iron. He then injected a little water, in order to clean the mouth, and, having drawn the tongue on one side, he



perceived on either cheek, opposite to the molars, large and deep ulcers, caused by the angular and cutting asperities which many of the molar teeth presented, and which tore the buccal membrane during the act of mastication. A neighbouring cartwright lent him a chisel and a hammer, with which he removed these angular and projecting corners, and he made the whole as smooth as he could, not having a rasp in his possession. He ordered injections into the mouth of a decoction of barley, acidulated and sweetened with honey. He kept the animal for a short time on cooked roots and panada, and gave him thick gruel to drink. The beast began immediately to improve, and, in the space of a month, he had recovered his condition and strength. May this be a lesson to young veterinary surgeons, and shew them the necessity of not contenting themselves with a superficial examination.

It is difficult to conceive of any thing that would fracture the molar teeth of the ox, except the jaw was fractured at the same time; but fracture of the incisor teeth is far from being of rare occurrence in the ox: in the sheep it is too frequent. The flattened and thin form of these teeth render them very subject to fracture. This circumstance lessens the value of the animal. The want, however, of one tooth is not of so great consequence as many suppose.

#### *Glossitis—Inflammation of the Tongue.*

This is less frequent in the ox than in the horse. The common cause of it, the pressure and cutting of the bit, has no existence here. But there often is inflammation of the tongue in young calves, which prevents them from sucking, and which is generally to be attributed to barbs or excrescences under the tongue, which should be removed with the scissars.

M. Gellé, transcribing from Gohier, cites a case of scirrhus of the tongue. "A cow had a scirrhus enlargement of the whole of that organ, which prevented her entirely from masticating her food, and she lived on thick gruel. The tongue was almost insensible, and very hard. It had acquired so great a size that it filled the whole of the mouth, and produced a considerable protuberance beneath and between the jaws. The enlargement still increasing, the little aliment which it could seize remained in the mouth, she could not swallow at all, not even liquid food. The cause of the disease was unknown. As soon as M. Gohier saw her, he effected some deep scarifications with a bistoury through the whole extent of the tongue, and he caused the mouth to be frequently washed with an aromatic lotion. Some days afterwards he ordered a decoction of equal parts of gentian root and hemlock, instead of the lotion. The amendment was immediate and rapidly proceeded, and in eight days she was able to eat and to drink. At the end of fourteen days she was perfectly cured.

This was a good case, and reflects much credit on M. Gohier.

It was an illustration of the sudden and violent swelling which sometimes takes place in this organ. The means adopted were right and proper ones. The whole tongue presented one enormous congestion of blood, which the bistoury permitted gradually to escape; but a scirrhus would have required different and longer treatment, if it could have been subdued at all.

The Professor makes no mention of another disease—at first purely one of the tongue, but ultimately involving the whole of the neighbouring parts—Blain or Gloss-anthrax—large red or livid vesicles or bladders, running along the side and base of the tongue—sometimes rapidly and fearfully enlarging, and threatening to suffocate the animal; and, unless relief is afforded in the course of a few hours, assuming a typhoid form, and destroying the patient. The work on “Cattle,” previously referred to, gives a long account of this disease.

Disease of the cheeks is rarely found in cattle, except ulcerative wounds from the rough and irregular molars, or the spreading of the aphthous inflammation already described, or the thickening and enlargement of some of the salivary glands, which are so abundantly found in this region. They are sometimes not much larger than a millet seed; they grow, and they waste away again and disappear; nothing is required to be done to them, except they attain an inconvenient size, and press against the teeth, and get wounded, and obstinate ulceration follows. In this case, or before they do attain any great size, they should be dissected out.

### *Maladies of the Salivary Glands.*

Inflammation of the parotid glands in the ox is of too frequent occurrence on the continent and in our own country. It is known by the appropriate name of Strangullion, because the poor beast threatens to be strangled every moment. The author of “Cattle” describes it and its appropriate treatment in England. M. Gellé narrates a case of it which came under his notice in France.

“I was called to see an ox, four years old, in good condition, who had been found, that morning, standing against the fence in one of the meadows, shivering—his legs drawn together under him—the throat swollen—the respiration difficult—the head protruding horizontally—and the mouth filled with saliva. (This is a peculiarly graphic sketch). He was brought into the stable. I was assured that he was perfectly well on the foregoing evening—that he had done his work well—did not appear to be fatigued, nor to have perspired, and had fed and ruminated all the day.

The parotid and maxillary glands were considerably swelled, hard, hot, and tender—the respiration was laborious, and a little whistling—the flanks were agitated, and the animal continued up. The mouth was red and hot, and the saliva ran profusely from it—all the mucous membranes were injected—the muzzle was dry—the eyes weeping—the pulse full and developed—the surface of

the body hot and dry. The alvine evacuations were frequent and soft—the urine was in a normal state, and the animal drank some *white water*.\*

I subtracted seven or eight pounds of blood from the jugular vein, which very much disquieted and displeased the proprietor,—ordered emollient cataplasms around the throat,—the whole of the body to be well rubbed—the animal to be covered with a woollen cloth, and eight ounces of Epsom salts with a decoction of the root of marsh-mallows to be given in the course of the day in three doses.†

On the following morning I was told that the ox was better: the respiration was freer, and the glands had sunk almost to their natural size. The same medicine.

At night the alvine evacuations were abundant, and watery. The proprietor suspended the employment of the laxative, and came, on the morning of the third day, to tell me that the engorgement of the glands had quite disappeared, and that the ox had ruminated before his departure, and shewn a great disposition to eat. On the fifth day he was quite well.

M. Gellé may well add, “I have seen parotiditis much more obstinate, and have been compelled to renew the bleeding on the following day;” and so have we, and we have lost our patient at last, in despite of our utmost exertion. “These evacuations of blood, aided by emollient applications and the laxative tisane, have never deceived me,” says the Professor. If we have been consulted in time, and attended diligently on our patients, we shall not fail in many cases; but there must be something different, in the virulence of the disease at least, which prevents every one of us from boasting of this uniform success.

We extract another similar case. “In November 1826, I was consulted respecting an ox, six years old, and moderately fat. He had had, during the last two or three days, an enormous engorgement of the right parotid, which equalled in size a loaf of three pounds weight. It had formed in twenty-four hours. It was hard, hot, and tender; but did not appear to annoy or indispose the animal.

“I bled him from the jugular, and employed emollient cataplasms over the gland. Five days afterwards they brought the patient to me. The tumour was not half of its usual size; it was hard, insensible, and did not appear in the least degree to annoy the ani-

\* The French, instead of giving gruel so frequently as we do, are in the habit of stirring some oat or barley-meal in cold or lukewarm water, and giving it to the patient. It is a very good practice.

† This seems to be singular treatment, but it is that which is adopted by the best practitioners in France. We should have given a pound of Epsom salts at least, in a single dose, and here are eight ounces divided into three doses. We shall see more of this as we proceed.



mal. I ordered the hair to be shaven from the tumour, and that, every day, three drachms of the strongest mercurial ointment should be rubbed into it, the part being afterwards covered with a warm lamb-skin. The resolution of the tumour was effected in twelve or fifteen days. I should have preferred the ointment of the hydriodate of potash, but it was sold very dear at our village, and I had to do with a poor client."

We should like to have—we entreat—the opinion of some of our correspondents who have a large cattle practice on these cases. We have known the iodine produce similar effects in a little longer time.

We must, however, do M. Gellé the justice to state, that he has been speaking of simple parotiditis, unmixed with any pharyngeal or laryngeal affection. If these appear, as they too often will, and if any bronchial affection is afterwards associated with these tumours, it is a very different case. We are inclined to think that the difference between us and M. Gellé hinges here. In France, pure parotiditis is not unfrequent, and will then undoubtedly yield to the treatment which he describes; but in our cattle, less worked, or not worked at all, and with far more flesh and fat and tendency to inflammatory action about them, it is a very different thing; and acute inflammation can scarcely arise in any part without involving other tissues or organs, and requiring prompt and powerful measures to effect a cure.

What an instructive commentary on all this do the cases of "Tumours in Cattle," described by Professor Dick in *THE VETERINARIAN* for June, afford. Enormous sarcomatous tumours suddenly appear about the superior angle of the lower jaw. They are of a medullary sarcomatous nature—they speedily attain an immense size. If they are removed by the knife or by iodine, the animal does well; but if they are suffered to remain, they undermine his constitution by the continued irritation which they produce, and the animal wastes away, and dies in the course of a few weeks. A common name for this disease is "*clyers*."

The remarks of Professor Dick on the predisposition in cattle to these diseases are so much to the point, that we transcribe them, although they have so lately appeared in our Journal. They satisfactorily elucidate Professor Gellé's observations on the temperament of cattle. "There is in cattle a strong tendency to this form of disease, under every circumstance in which a part is inflamed, either from internal derangement or external injury. There is, in fact, a weakness of constitution in cattle, from which their diseases have a determined likelihood either to run rapidly into putridity, or to sink into a chronic form. The constitution of their blood leads us to this supposition; for in cattle there is never to be found that separation of the constituent parts, by which what is termed the buffy coat is made to appear."

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AN ESSAY ON THE FUTURE EXISTENCE OF THE  
BRUTE CREATION.

*By Mr. W. F. KARKEEK, V.S., Truro.*

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Quicquid est illud quod sentit, quod sapit, quod viget, cœleste et divinum est, ideoque æternum.—*Cicero.*

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VARIOUS and contradictory are the opinions which have been formed of the metaphysical nature of the inferior animals. By one, they are sunk to the level of insensate matter; by another, they are exalted to immortality. On a subject so astonishing and so abstruse no one can doubt that difficulties of a most formidable nature will occur, since we are incapable of substantiating our positions by demonstrative evidence. The highest credence, therefore, that we can hope to attain, is the probability of the fact; and this holds good on all occasions, when the contrary probabilities are either fewer in number or less considerable in weight.) In the ordinary affairs of human life, and even in the sciences, our opinions and conduct are generally determined by a series of probabilities, and in a concurrence of reasons, which supply the want of more conclusive evidence on subjects which are not susceptible of strict demonstration. A philosopher has no demonstrative arguments to support the one-half of the opinions he has formed in relation to the phenomena of the natural world. His deductions respecting the causes of the winds, of thunder, of lightning, of volcanic eruptions, of the nature of light, sound, electricity, galvanism, and other operations of the system of nature, are grounded on that species of reasoning which is termed analogical, and which, at best, amounts to nothing more than a high degree of probability.

The truth of metaphysical opinions is, indeed, a disheartening subject of discussion, and it is much easier to say that a metaphy-

sician is in the wrong, than to set him right. The best philosophical chemist may fail in analyzing the elements of the mind; for as well might we grasp the sunbeam, or seize the ever-varying hue of the opal, as define this bright untangible reality—this meteor which rises suddenly from the dark void of a past eternity, to blaze awhile in our sight, and again plunge into the unknown depths of a future eternity.

With regard to ourselves, we know if we do err, and rely

“ On the evasive spirit of the marsh  
Whose lantern beams, and vanishes, and flits  
O'er bog, and rock, and pit, and hollow way,”

that misery and mortification will await us;—but, as it respects that deep and mysterious problem in the Divine government,—“the future existence of the lower animals,”—whatever opinions we may entertain respecting it it can only be regarded as a harmless speculation, and may be very fairly considered, in parliamentary language, by all sects and denominations, as an “open question,” since it involves no religious dispute, and has nothing whatever to do with controversial divinity.

It has been maintained that a belief in the future existence of animals cannot possibly be of any service to the animals themselves. We very much doubt the truth of this, since one of the principal sources of inhumanity and cruelty to animals proceeds from this very belief, that the Great Father of all

“ Gave the Nubian lion but to live  
To rage its hour, and perish; but on man  
He lavish'd immortality, and heaven.  
The eagle falls from her aerial tower,  
And mingles with irrevocable dust;  
But man from death springs joyful,  
Springs up to life and to eternity.”

Racine the younger, in two poetical epistles to the Duchess of N——, believes that, in defending the opinions of Des Cartes, all the lower animals are mere machines; and that all the phenomena they exhibit are purely the effects of mechanical structure; that he is justifying the ways of God to man by supposing that Divine benevolence would never have subjected the lower animals to such hardships and cruelties were they any thing more than insensible automatons.

Hence it should necessarily follow, that no treatment whatever of animals can be considered as allied to cruelty; and that we may, Majendie-like, vivisect them without any feelings of remorse. There are other obvious advantages besides this. “Who,” he asks, “is the man that would ever consent to adopt the opinion that



contemptible brutes should partake with him in that divine light which reminds him of his illustrious origin?" To suppose that brute animals are sentient, that they are alive to pleasure and pain, and yet that their existence is limited to this earth a few years, would be, thinks Racine, to accuse heaven itself of injustice.

We believe that opinions such as these have led to the practice of the most abhorrent cruelties. A correspondent of "The Association for promoting rational Humanity towards the Animal Creation" was present at one of Majendie's exhibitions. "A Blenheim spaniel," he writes, "was brought upon the table. The doctor patted it, and then it put its paws upon his shoulder. 'You see,' said Majendie, 'that we are good friends!!' He began by cutting off the hair with his scissors, close to the neck, while the dog made several attempts to lick the operator's face, and to play with the scissors. 'It is singular,' said the doctor, 'that this breed never bite;' and he then began to dissect from the jaw-bone to the point of the shoulder, pausing at intervals to name the muscles, and to pat the agonized dog, who looked with supplication at his tormentor, and licked his hands!"

The Chevalier Ramsay was of opinion that fallen angels underwent their punishment in the bodies of brutes, wherein they were incarnate, and incarcerate, as sentient sufferers and conscious spirits. If this should be true, and some men being what they are, there are cases in which the animal soul would be degraded instead of advanced, for in many instances the beast would be the most rational and humane of the two—the ox would be worthier than his butcher—the horse than his rider—the cock than the cock-fighter; and the poor dog, than a friend in the shape of an *experimenting physiological vivisector*. "Majendie," says Mr. Youatt, "is not contented with stating to his pupils the conclusions to which he has arrived on certain points, and the circumstances by which he was induced to abandon former opinions on the subject; but actually repeats on living animals, in every course of lectures, the experiments which he had instituted."

The dog is the principal victim selected for these experiments, and those are generally chosen who possess the reputation of being *lively, docile, and intelligent*. And for what infamous purposes! Frequently to have *thick gimlets*, and sometimes burning irons, forced into their brains, and then to be watched, *in order to discover how they will eat, drink, and walk*, and to ascertain how long under such circumstances they will retain their powers of intelligence.

And fiends such as these, not only hope to be forgiven, but claim to themselves a sole exclusive heaven;

“Whilst the poor dog, in life the firmest friend,  
 The first to welcome, foremost to defend,  
 Whose honest heart is still his master's own,  
 Who labours, fights, lives, breathes for him alone,  
 Unhonour'd falls, unnotic'd all his worth,  
 Denied in heaven the soul he held on earth.”

But if, indeed, the beasts do perish, that very circumstance ought to produce greater kindness towards them. Man may persecute his fellow-man, but hope will still lie in the bitter cup, and visions of brighter times will illumine his present misery; but what counterbalance to their sufferings have the poor brutes? “Theirs,” says the eloquent Chalmers, “is unmixed and unmitigated pain; the agonies of martyrdom, without the alleviation of the hopes and the sentiments whereof they are incapable. When they lie them down to die, their only fellowship is with suffering, for, in the prison-house of their beset and bounded faculties, there can no relief be afforded by communion with other interests or other things. The attention does not lighten their distress as it does that of man, by carrying off his spirit from that existing pungency and pressure which might else be overwhelming. There is but room in their mysterious economy for one inmate, and that is the absorbing sense of their own single and concentrated anguish. And so in that bed of torment, whereon the wounded animal lingers and expires, there is an unexplored depth and intensity of suffering, which the poor dumb animal itself cannot tell, and against which it can offer no remonstrance—an untold and unknown amount of wretchedness, of which no articulate voice gives utterance. But there is an eloquence in its silence, and the very shroud which disguises it only serves to aggravate its horrors.”

Des Cartes and his followers may be proud of proving, as they imagine, that the lower animals are mere machines without sensation, and just so constructed as to give forth all the natural signs and expressions of it; and they may suppose, by thus lowering them, that they exalt themselves in the scale of animated existence. But they proceed on false premises, in supposing that they exalt their reason and dignity by degrading animals; for, allowing their own superiority, the more highly animals are exalted, the higher too must be that superiority, as a ruler of a civilized people holds a more honourable station than a ruler among savages.

The Great Maker of All has delegated to man a portion of his authority; but he has not withdrawn his watchful care from one of his creatures. His care extends to the smallest creature alive. “The beasts of the field cry unto thee,” says the Prophet, “and

thou hearest them." What plea for mercy, then, shall we offer, when our delegated authority is at an end, and we stand at His tribunal whose works we have abused?

We took for our text, "*Quicquid est illud, quod sapit, quod viget, cœleste et divinum est, ideoque æternum.*" It will be an easy task to prove that animals do really "feel, will, and act with discernment;" yet it would be begging the question to ask our readers to admit, with Cicero, that, because they possess those qualities, they must necessarily be eternal. We will, therefore, now establish the first part; and to do this, it will be only necessary to take some of the most simple actions of animals.

Every animal is peculiarly endowed according to its destined mode of life. In those animals, for instance, who have to depend on the eye both for their safety and their support, we find this organ is far more exquisitely formed than in man. The eagle can discover her prey many fathoms above the ground, even when that prey is at rest, and coloured very similarly to the ground upon which it crouches; and as she descends upon it in the arrowy swiftmess of her stoop, she can so guide her course as not only to strike the prey, but to strike it where the blow shall have mortal effect.

The smaller tribe, and all birds and insects which hunt for their prey upon the wing, afford further instances of this remarkable accuracy of the eye. But, perhaps, the most remarkable instances are found amongst fish—and, also, in many unvertebrated inhabitants of the sea, especially the lobster, which, launching itself from the rock, can dart itself forward many feet with the rapidity of an arrow and the certainty of a rifle.

This perfection of vision in brutes is produced by the most beautiful and perfect adjustment of the eye, which depends not on any absolute connexion with the immediate faculty of seeing, but on the muscular action of the eye.

The fact of the adjustment of the eye to distance being muscular, and not in itself any direct part of the proper act of vision, is very important to our subject; since it clearly proves that the eye sees nothing but colour, and that the knowledge of distance, and of magnitude of which distance is the measure, is obtained by muscular experience, upon the same principle, though not, of course, in the same manner, as we measure the length of a road by pacing along it.

Then what we call visual knowledge is not, in any way, an act of the eye, as a mere organ—admirable as it is in its form and use—but a mental influence arising from the generalization of two distinct actions of different parts of the eye, which have in themselves no connexion with each other; or, in other words, it is a discern-



ment by the mind, and, consequently, can be possessed by no mindless creature.

✕ “Insects exhibit to us another investiture and display of the living and sentient and thinking principle; and this in full activity and power within figures and limbs so small, as to compel our wonder at the nature of that intellectual mystery and miracle to which space is indifferent, and which is equally efficient and astonishing in the smallest as in the greatest body\*.”

Locke admits to brutes a certain degree of reasoning, but denies them the power of abstraction. Let us briefly consider this opinion. Man himself does not possess the power of abstraction in his very early years, except in a very limited degree, and, before he acquires it, he differs nothing in his reasoning powers from some of the lower animals. The infant in discerning pleasure from pain, bitters from sweets, and in discriminating its parent, does not at all excel the faculties of the brute world; nor in its cries and smiles does it at all surpass the cries and playfulness of other animals, as signs of its pleasures and pains.

Abstraction admits of a vast variety of degrees, descending from that which constitutes the highest order of intellect to a power of generalizing which could not be denied even to an idiot, and it cannot be denied that all animals clearly possess this power in a greater or less degree: for example, some animals can count, and are aware of the recurrence of certain numbers; and a dog who has been once beaten with a stick, or pelted with a stone, will not soon forget it. Again, “a dog knows his master, knows that he is not a dog, and that he differs from other men. A bull is enraged at a red colour, be the form of the body what you please. Birds wishing to drink water from a pitcher in which it is too low for them to reach with their bills, throw pebbles in, until so much of the water is displaced by them that the surface rises to the necessary height. In this case the bird abstracts. It never throws stones into a river with the same view, but it does throw them into the water in the ewer. It abstracts the water from the thing which contains it, and could not reason upon the effects of the operation without a process of abstraction†.”

The question of abstraction would be most conclusively settled if it could be proved that they possess a language—the most important distinction between man and beasts. But the absence of this appears not to be owing to the inability of forming general notions; since they all possess, more or less, a system of conventional signs, which have a general signification. The cock grouse

\* Sharon Turner.

† Lord Brougham.

calls the hen—the pigeon, and the fieldfare, and the crow, make signals—and in the history of the wild horse we have a certain case of signals. They are described by travellers as living in a kind of community, sometimes consisting of thousands. Some affirm that they have seen ten thousand in one troop,

“ With flowing tails and flying manes,  
Wide nostrils, never stretch'd by pain,  
Mouths bloodless to the bit and rein,  
And feet that iron never shod,  
And flanks unscarr'd by spur or rod.”

They seem to be under the guidance of a leader, the strongest and boldest of the herd, and whom they implicitly obey. They appear to know that their safety consists in their union, and in a principle of subordination. The lion, the tiger, and the leopard, are their principal enemies. At some signal, intelligible to them all, they either close in a dense mass, and trample their enemy to death, or, placing the mares and foals in the centre, they form themselves into a circle, and welcome him with their heels. In this attack their leader is the first to face the danger, and, when prudence demands a retreat, they follow his rapid flight. All this implies not only abstraction, but that kind of abstraction, too, which gives us our language ; it is, in fact, a language which they possess, though simple and limited in its range.

Many persons are of opinion, that, to admit brutes to be endowed with reason, the same in kind with ours, however inferior in degree, is an insult to man ; but, if we analyze this opinion, we shall find that pride produces all this. Pride, the curse of all civil relations, not only pervades social life, but contaminates all our intercourse with the whole range of creation. The invalid, writhing under a complication of that frightful list of corporeal maladies which follow in the train of civilization and improvement, is, with difficulty, persuaded that he has a body very nearly the same, only more exposed to acute sensation, as that of his humble canine companion. He forgets, also, that this companion is capable of a degree of attachment and gratitude, qualifications surely of a mental character, which, while they will survive the severest shocks of adversity, triumph over every temptation, and often shame the frail friendship of proud, reasonable man.

“ Oh, man ! thou feeble tenant of an hour,  
Debas'd by slavery, or corrupt by power,  
Who knows thee well must quit thee with disgust,  
Degraded mass of animated dust !  
Thy love is lust, thy friendship all a cheat ;  
Thy smiles hypocrisy, thy words deceit !  
By nature vile, ennobled but by name,  
Each kindred brute might bid thee blush for shame.”

We are not forgetting the boundaries which exist between man and his humbler yet elder brethren; but, for the purpose of our argument, are endeavouring to shew that the difference between them is in degree, and not in kind. The material part of man, though most harmoniously and aptly adapted for his mental powers and mode of life, is, in fact, in many respects beneath the average level of animal organization. The elephant exceeds him in strength, and perhaps, in some cases, even in sagacity; the ape can climb more easily, and the stag-hound run more swiftly. Among other animals, the eagle can float on the sunbeam, and sail through the blue depths with not a downy feather ruffled by the fierceness of the storm; the nautilus can spread on the wide ocean its sails, and plough securely the tempestuous wave; the fish dives to the unexplored halls of Neptune; the corallinæ erect an island on the foaming billow; the bee constructs a mathematical figure, teaching man one of the finest lessons in architecture; the ant erects for itself majestic halls and palaces, displaying a knowledge, so to speak, of the intricacies of political economy, commerce, government, and legislation: and all these, with man, exist as he exists, and vanish as he vanishes from the sphere of observation. *Why then should we, who are on a level with or beneath other animals in some respects, on the one hand be so unwilling to acknowledge the justice of their very humble comparative intellectual pretensions on the other?*

Mr. Youatt, in his Essay "On the Obligations of Man to the Inferior Animals," in which he has ably and powerfully advocated their claims, shews by a few interesting anecdotes (the authority for which is not to be impeached, most of them, indeed, capable of verification by the testimony not merely of those on whose veracity they are given, but also of many eye-witnesses), that brutes are evidently possessed of attention, and memory, and association, and imagination; the difference between the biped and his quadruped slave being in degree, and not in kind. But he stops not here. In man there is still a superior principle, and it is the same with brutes; they have the power of acquiring, and they do acquire, knowledge from experience; they display a degree of memory, and of sagacity, and of docility, which are not estimated by us as they deserve, and which should procure for them an immunity from the cruelty of which they are frequently the victims. To properly illustrate this, it might be well to introduce a few of the pleasing anecdotes related by Mr. Youatt, in confirmation of his opinion; but we refer our readers to the work itself. The following well-authenticated anecdote of the sagacity of the elephant will suffice our purpose, our only object being to prove that they possess *reasoning powers*.

"An elephant, which, a few years ago, belonged to Mr. Cross,



at Exeter Change, attained to the practice of a curious trick, which by repetition he might be said to have acquired. It is the usual part of the performances of an elephant at a public exhibition to pick up a piece of coin, thrown within his reach for the purpose, with the finger-like appendage at the extremity of the trunk. On one occasion a sixpence was thrown down, which happened to roll a little out of the reach of the animal, and not far from the wall. Being desired to pick it up, he stretched out his proboscis several times in order to reach it: he then stood motionless for a few seconds, evidently considering—*we have no hesitation in saying, evidently considering*—how to act; he then stretched his proboscis in a straight line, as far as he could, at a little distance above the coin, and blew with great force against the wall. The angle produced by the opposition of the wall made the current of air act upon the coin as he evidently intended and anticipated it would, and it was curious to observe the sixpence “travelling by these means towards the animal, till it came within his reach\*.” This complicated calculation of natural means at his disposal was an intellectual effort beyond what a vast number of human beings would ever have thought of, and would be considered as a lucky thought, a clever expedient, under similar circumstances, in a man. It was an action perfectly indifferent, and had no relation to instinct.

At the risk of tiring my readers, I will relate another anecdote of the elephant, which will plainly shew that reason is not the exclusive prerogative of man,—that man is not the only rational creature. This is an instance of wonderful sagacity and tractability which occurred in the stud belonging to the Mogul Emperor, whose elephants, besides their daily provender of grass, fresh-gathered leaves, and vegetables, were fed with balls, called mossaula, composed of flour, spices, sugar, and butter, ingredients generally expensive, especially in a camp where every thing was extravagantly dear. A vegetable diet, and about thirty pounds of grain, is the usual daily allowance for an elephant: this mossaula is an indulgence on service, and was allowed to the Peishwa's elephants and Arabian horses, in a country frequently laid waste and affording little provender for cattle. In our Guzerat encampments man and beast suffered many deprivations, and were often at a loss for food: notwithstanding this general deficiency, an ample supply of mossaula was allowed to the favourite elephants; yet they became gradually emaciated, and pined away without an apparent cause. The keepers were suspected of withholding their mossaula, and, the fraud being proved, were severely punished; and the master of the elephants, who, like the master of the horse in European courts, is generally a man of high rank, appointed

\* Griffith's edition of Cuvier, vol. iii.

inspectors to see them fed, which for some time had the desired effect: the elephants regained their strength, and appeared in good condition.

Some months afterwards they fell off again. The inspectors were astonished, as they daily saw them fed. They examined the mossaula, found its ingredients excellent, and the quantity not diminished. The cause once more discovered, evinces the influence the keepers had attained over these extraordinary animals. They had taught them to receive the balls with their trunk, and convey them to their mouths in the inspectors' presence, but to abstain from eating them. These docile creatures actually practised this self-denial; they received the food they were so fond of from their hands, put it into their mouths with their trunks, but never chewed it: the balls remained untouched until the inspectors withdrew, when they took them out, and presented them to the keepers with their trunks, accepting only of such a share as they thought proper to allow them\*."

That animals can compare two or more objects present to their senses, discern some of their relations, and execute an act of judgment thereupon, is clear: the anecdote related is sufficient to prove this. "The dog, however," says Mr. Youatt, "carries this restraint on his appetite, and feelings, and wishes, to a much greater extent. See him, accompanied by the brute that is too often his owner, dragging the dogs'-meat cart, half-starved in the midst of that which would be delicious fare to him. Was he ever known to steal one morsel? Were his obedience and attachment to his tyrant-master lessened by the scantiness of his fare, or even by the occasional cruelty of his conduct?"

We have no inclination to discuss the question much farther; sufficient, we hope, has been already adduced to prove the truth of our motto, that animals "*do feel, will, and act with discernment.*" You cannot deny reflection to animals. Do they not deliberate? and do not the anecdotes which we have already recounted prove that they possess a mind? Reflection, then, is as inseparable from mind as extension is from matter: that which is not extended cannot be material; that which does not reflect cannot be intellectual.

But we will go still further. The few anecdotes which we have adduced prove that brutes possess the faculty of *conscientiousness* as well as ourselves. This faculty is very prominent in the dog, the horse, the elephant, and, indeed, in all our domesticated animals; and it is of the very highest importance as a regulator of some of their other faculties. If combativeness and destructiveness be too

\* Forbes's Oriental Memoirs.

active, conscientiousness prescribes a limit to their indulgence; it permits defence, but no malicious aggression. When this faculty is very powerful in the dog, the poor animal, as in the instance of the circumstance related by Mr. Youatt, will carry his restraint so far as not to touch any of the delicious fare around him, although exhausted with fatigue and hunger. But the following anecdote will more fully illustrate this faculty.

“An officer of Holstein returned from a day’s shooting extremely fatigued. He hastily placed the game in his chamber, locked the door, and unconsciously shut in his dogs. He was almost immediately afterwards dispatched on business, and departed, forgetting his game. He was absent many days. On his return he hastened to his chamber, where he found the faithful dogs stretched by the side of the game, and dead. Several partridges and hares were strewed around them, but they had not touched one of them, nor had they cried to be released, which would have been immediately heard in the chateau, because they imagined that they were placed there by their master to guard the produce of their day’s excursion.” But this is the consequence of education, some of my readers will exclaim. Be it so; still it is the same God-like faculty which man possesses, that regulates our feelings, and points out the limit which they must not pass.

We are fully aware of the prejudices which we now encounter from the general belief that man is the only religious animal, and that the Deity has given him a conscience, which inward monitor warns him of his errors; and, when properly heeded, so regulates his conduct, that he cannot deviate from the paths of rectitude and honour. Let us analyze this. The various and contradictory systems of ethics that have prevailed in different ages, and in different communities of men, prove that no religious sentiments are instinctive. The standard of right has been as various as the different societies have been numerous. Moral error in one place has been religious and political expediency in another. Crimes that incur the full penalty of the law in one country have been tolerated in another. The moral character of man is the result of accident and chance; he is almost a factitious animal,—like a block of marble exposed to the varying chisel of the statuary.

Man brings nothing with him into this world. He is moulded and formed according to the artificial standard of that society in which he happens accidentally to be situated. The same man that bends at Loretto would have been a pious pilgrim at Mecca, or a fervent adorer on the banks of the Ganges. We do every thing from breeding and education, *and so likewise do our domesticated animals*; and it is these that form the character in both cases, and without which there would be neither conscience nor judg-



ment, which is a knowledge of knowing what is right and what is wrong.

Let us take one of the aborigines of America for an example of this, who, in accordance with his political and religious belief, in order to prove himself virtuous and valorous, and to be considered equal to his fellow-men, is required to be in possession of the scalps of a certain number of his victims. This man, until having performed those duties which are held out by the doctrines of his barbarous religion, will feel an inward dictation that he had not performed those things which rendered him, in the eyes of his surrounding fellow-barbarians, equal in virtue to most of the rest of them; and he would, perhaps, be regarded in an immoral point of view by his fellow-countrymen, more especially if he had not acted with his wonted bravery when certain opportunities offered. He would feel degraded, restless, unhappy, or, more decidedly speaking, his conscience,—fashioned by his barbarian birth and education—would condemn him until he had fulfilled these duties. While we, on the contrary, bred in a Christian and civilized nation, have our ideas of right and wrong, our judgment,—that is to say, our conscience,—fashioned altogether by the train of thinking which our minds have been subject to in the course of our religious Christian education. Thus conscience must be considered as altogether a relative term—a sensibility of the mind—an impulse dictatory to the mind as to what is right and what is wrong, which inward monitor is only the production of an accumulation of knowledge, or known facts and doctrines; in fine, conscience is knowledge and knowledge is conscience.

And have the brute creation no conscience? Yes; each animal possesses a conscience according to his capacity, and agreeably to the education which he has received. “Observation and experiment are fast leading to the conclusion, that it is one particular part of the brain that is the peculiar seat of intelligence,—*the external, cineritious, or cortical part*. To this portion fibres may be traced from all the organs of sense, and from it to every part of the frame. Thither the intelligence is communicated, and thence the commands are received\*.” That portion, compassing the bulk of the different brains, is far more abundant in the human being than in any of the inferior animals; it is also more abundant in monkeys, elephants, and dogs, than in some other of the lower ones, such as the sheep and the ox: and it is singular that, while we are calculating the relative proportions of brain that are found in each, we are also recording the comparative intelligence of these animals.

\* Youatt.

From these facts we come to the conclusion, seeing that there is quite enough of similarity and approximation in the brains of animals to our own, that *animals were intended to be acted on by a principle the same in kind as our own*. This, you perceive, involves doctrines of infinite consequence; for, if the intellectual phenomena of man require an immaterial principle superadded to the brain, we must equally concede it to the brute creation; many of which, we have already seen, exhibit manifestations differing only in degree from some of the human: and the only method by which we can get rid of this argument will be by maintaining, with the materialist, that all the phenomena of life and mind result entirely from bodily structure.

Well, for the sake of argument, suppose we yield for a moment to the sceptic the position, that the mind is a material substance, and cannot exist but in connexion with a material form,—what will he gain by the concession? Why, only this, that, if his doctrine be the true one, it matters very little whether the brutes are constituted differently from ourselves or not; since, according to his own opinions of the nature of the living principle, it must necessarily follow that *the soul of a brute is as good as his own*. Or, again, suppose we allow to another set of philosophers, by way of argument, that all the actions of animals are *instinctive*, which, properly speaking, may be said to be an involuntary desire or aversion, acting on the mind without the intervention of reason, motive, or deliberation; then “observe that there are only two essential substances in all nature, *spirit* and *matter*. In which of these two substances, does this instinct reside? If it exists in matter only, unconnected with spiritual substance, it would be mere matter operating on matter. All motion refers to some agent, supreme or subordinate. No effect can be produced independent of an antecedent and efficient cause. Animal nature exhibits an endless variety of motions. If there is no spiritual substance in animal nature, then by what is it actuated? Is animal nature, independent of spirit, able to move? If there are motions peculiar to animal nature, and which no other material object manifests, then there must be a corresponding principle producing them, otherwise we admit an effect without any adequate cause, which would be a perfect absurdity. If there is not a spiritual active principle in animals, then instinct, with all their senses and members, would be useless. If there were no such principle to influence the eyes, the ears, the brain would be as blind and as deaf as a stone. However perfectly organized any body may be, whether brute or human, yet, independent of spirit, mind, or soul, it cannot realize any outward object. You may speak, but it cannot hear; you may hold up the most pleasant object, but it cannot see. Now,

if animals can see, hear, and perform all the functions peculiar to their nature without any kind of spiritual substance, and if man cannot see, hear, or feel, without the possession of a spiritual substance, then it would follow that the bodies of brutes are more effectual than our own\*." Then it is actually necessary, in order to maintain the inferiority of brutes compared with human nature, that animals should actually possess some kind of spiritual substance by which we can account for their motives.

It must be allowed that the connexion existing between mind and matter is certainly of a very arbitrary nature, as a perfect display of mental capacity can only arise from a perfect development of organic form. We behold every where that perception, and all the faculties of the mind are inseparable from perfection of organization in the brain and organs of sense: whenever the latter are defective and impaired, perception and its modes become impaired also. It is this arbitrary connexion that has furnished the materialist with the main pillar of his argument. In this, however, he seems to have committed an error, very common in inquirers after nature,—that of confounding effects with their causes. The actions of life are the effects of organic structure;—yet that organic structure itself is only the effect of the operative power of a living principle, which is the *primum mobile*. This principle of life is the great architect which models all the organs of the body; it is the essence of the perfect structure of parts; it is, in fact, a first cause, of which organization is only an effect.

We are entirely ignorant of the grand principle acting upon matter. If we follow it through a series of whatever length we may, it leaves us as much in the dark at the thousandth step as it did at the first one. This principle, acting upon matter in a wonderful and mysterious manner, originates every species of living being, and brings it gradually to the full development of its species. Here, however, there is a limit. The principle, in every known individual case, exhausts itself, until the fabric which it had elaborated is brought to the common storehouse of mere matter. We witness this daily. We know that, when the living action of the body has ceased, the substantive matter of which it is composed is given up to the common laws of inorganic matter. But to know this, and to know the death of animal life, are very different things. If life was the result of organization, then it necessarily follows that it would cease to exist when the body dies. But the organization is the product of the life, and, therefore, it must be evident that the life must have the priority in existence. And, when the body of an animal is scattered to all the winds of heaven, and dissipated through

\* Thompson on Animal Restoration.



the air, and the water, and over the earth, until not an atom of it can be identified, the living principle is still safe in the keeping of the Eternal One, to whom endless duration is one simple and indivisible now.

This brings us to the philosophical proof of the doctrine of "the immortality of the brute creation." The only knowledge that we can have of mind, bears a very close resemblance to our abstract notion of matter; and, as it is utterly inconsistent with our views and notions of *mind* to suppose it capable of any dissolution, there is really no species of death to which mind can be subjected. It must, therefore, be very palpable to the understanding of every one who can think, that one created spirit can no more annihilate another, than one material body can turn another material body into nothing. "Nothing can be put to it, nor any thing taken from it," said the Inspired Writer. No creature can create or add any thing to God's work, nor annihilate the least particle of it. Creation and annihilation are acts eternally and incomprehensibly far out of the reach of any being, except God himself. Amidst the perpetual transformations and changes that are going forward throughout universal nature in all its departments, no particle of matter is ever lost, or reduced to nothing. Is it not, then, very improbable that the reasoning principle in animals can ever be destroyed? If annihilation forms no part of the plan of the Creator in the material world, it must be inconsistent to suppose that a system of annihilation is in incessant operation in the world of mind.

[To be continued.]

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#### REPORT BY THE ROYAL AND CENTRAL SOCIETY OF AGRICULTURE ON THE MEMOIRS AND CASES PRE- SENTED BY CERTAIN VETERINARY SURGEONS.

THE Royal and Central Society of Agriculture in Paris stands first in the numerous lists of associations of this description with which every part of France abounds. It is established and supported by the government of that country. It has, from the beginning, wisely considered every thing connected with agriculture as deserving its attention. The flocks and herds of the farmer constitute a very important portion of his wealth; and to lengthen the services of the horse and the ox, and to heal or prevent the numerous diseases to which these animals are subject, are regarded, and wisely, by the Central Society and all its affiliated branches, as an object worthy of their most serious attention.

This Society has, therefore, been in the habit of offering annually

certain prizes—not for essays on subjects selected by them—but contributed by veterinary surgeons on any or every topic connected with veterinary science. The umpires are veterinary surgeons, who are members of the Society. The names of Gasparin, Huzard, Yvart, and Girard, during the last year, are pledges as to the honourable distribution of the prizes, and of the importance which is attached to this *concours*.

The English Agricultural Society would do well in offering similar premiums for essays, the subjects of which, perhaps, were not selected by the writers, but by the proper Committee of the Society, as those most connected with the interests of the farmer, or on which some definite knowledge is desirable to be obtained.

M. Girard thus reports the result of his own labours and those of his colleagues:—

“The *concours* of the present year, relating to observations on cases connected with veterinary medicine, will not be less important than that of the preceding one. Fourteen MSS. have been presented. Several of them contain most important facts, shewing that the division of medicine which has reference to the domesticated animals is rapidly improving.

“THE FIRST MS. belongs to M. Lacoste, M.V., at the Dépôt at Caen, who obtained honourable mention in the *concours* of 1837, and a silver medal in 1838. His memoir contains various cases.

“1. *The amputation of the tongue of a horse*, prodigiously tumefied, and containing several extensive and deep ulcers. The diseased part hanging out of the mouth, and pinched by the incisor teeth, prevented the animal from eating or drinking. This portion was become of a blue colour, and threatened to be gangrenous. It was removed by means of the bistoury. The operation was not followed by any considerable hemorrhage, and such as it was, it soon stopped. A cure was effected in twenty-two days. During the cure the horse was fed with barley meal and grass.

“2. This was the *amputation of the penis of a dog*. It was effected by a cruel scoundrel when the animal was tied to a bitch. The hemorrhage was very great, and it was fortunate that it did take place, for violent fever soon followed the outrage. M. Lacoste employed frequent fomentation and emollient injections, together with a very restricted diet. A cure was effected in thirty-four days.

“3 and 4 relate to *protrusion of the rectum* in two horses. The portion, reversed and hanging from the anus, was livid, swelled, and very painful. The animals, evidently a prey to the severest sufferings, did not cease to make the most violent convulsive efforts. The patients were placed in a convenient and comfortable place where their hind quarters were more elevated than the fore ones. M. L. then effected some deep scarifications of the tumefied part,

and, a little time afterwards, attempted to return the gut. The hernia renewed itself many times, and M. L. was constrained to manufacture a kind of bandage, in order to retain the intestine in its place. The application of this bandage, which, except at certain intervals, confined the intestine during several days, favoured the settlement of the parts, and a cure was insensibly effected.

"5, 6, 7, and 8, are cases of *luxation of the patella of the horse*. Three of these accidents were of recent date—the other had existed fifteen days. M. Lacoste effected a reduction of the luxation in the ordinary way, which consisted in bringing the leg forward, and pushing back the patella in a direction upwards and inwards. Blisters were then applied, which produced considerable swelling. This should always be effected in these cases, and in the development of which alone we can hope to obtain a complete cure.

"9. *Luxation of the cervical vertebræ*.—A horse, having his halter round his neck, was loose in his stable. On the following morning he was found lying on the floor of the stable, with his left foot entangled in the halter—the neck bent, and fixed in a direction towards the left fore-arm. M. Lacoste, having examined the animal, said that there was luxation of the cervical vertebræ. Unfortunately he was not able to be present at the autopsy of the patient, who was destroyed on account of his age, his long service, and his little value.

"10. *Luxation or fracture of the femur*.—This occurred to a filly two years and a-half old, already ill, and unable to rise without assistance, and who, in endeavouring to get up, fell on her hind quarters, the right leg slipping along the ground. The young animal remained down, and lost all use of this leg. A veterinary surgeon, after an examination of the parts, pronounced that there was luxation of the head of the femur, or, more probably, fracture of the head of that bone. After this vague diagnosis, he got her up, placed a blister on the *coxo-femoral* joint—the union of the head of the femur with the acetabulum of the os-innominatum—and had her led into a meadow close by. The thigh began to waste away, and the lameness remained, but, after awhile, the animal was able to do some slow work, and became, to a certain degree, useful. M. Lacoste, who afterwards saw the animal, expressed his opinion that it was a case of luxation, but this is scarcely credible, considering the construction of this joint.

"11. *Fracture of the os innominatum*.—A mare that was undergoing an examination as to the existence of roaring, backed violently, fell on her right side, and then made a sudden effort to rise. Immediately after the accident she was slightly lame, and that lameness daily increased. She was turned into a loose-box—bled, and put on a restricted diet—and, soon afterwards, a blister was ap-



plied on the right thigh. Eight days after her fall she was found dead, and a fracture was discovered of the ischio-pubian symphysis, forming a complete separation between the two ossa innominata, or coxal bones. Several large vessels were lacerated, and the internal bleeding was a sufficient cause of death.

"12. *Fracture of the frontal bone.*—This fracture was produced by a blow from the foot of another horse. The external plate of the frontal bone was driven into the sinus beneath, and there was a laceration of the integument fifteen by twenty-eight lines in extent. M. Lacoste having fruitlessly attempted to raise the depressed portion of bone and replace it in its natural situation, was compelled to be content with bringing the edges of the skin together by means of sutures. The wound was completely healed in fifteen days.

"13. *Fracture of the Zygomatic arch.*—A horse fell on the pavement, and fractured the right zygomatic arch in three places, and which were thus buried in the sinus beneath. A cure was accomplished in eight days, favoured by copious bleeding, restricted diet, and emollient lotions on the injured part."

These cases, of which the preceding is an analysis, are related with precision, simplicity, and clearness, and prove M. Lacoste to be a scientific practitioner, and meriting the approbation of the Society and of the veterinary profession in general.

THE MS., No. 2, has for its title, *A Memoir on Strangles, with Practical Cases*, by M. Mousis, veterinary surgeon at Pau. This memoir is preceded by some reflections rather diffuse and objectionable, and mingled with a few gratuitous assertions. We pass them over, and go to the matter of the Essay.

Contrary to the generally received opinion, the author believes that the process of dentition has nothing to do with the development of strangles. "That which has induced," says he, "some credit to be given to this opinion, is the fact that this disease usually appears in young horses at the period at which they are changing their teeth: but colts well fed, well taken care of, and protected from the inclemency of the atmosphere, do not ordinarily contract strangles at this period. At least, dentition is not a determinate cause of strangles, although it may predispose the animal to this disease, and aggravate the symptoms of it."

The symptoms of mild strangles which accompany the abscess under the jaw are, in general, well and truly described. The progress, duration, and termination of the disease, are also accurately stated; but the author has neglected to speak of the propagation of the catarrhal inflammation from the nose and the larynx to the bronchi and the lungs, which is a complication always serious, and sometimes mortal.

With regard to the treatment, M. Mousis lays it down as a prin-

ciple, that strangles should be combatted by the antiphlogistic plan of treatment, and that bleeding is indicated in the early stage of the most benign type of the disease. Experience, however, has demonstrated, that, where acute inflammation does not appear, the disease runs its regular course without danger; and, therefore, it scarcely seems to be good practice to interfere with its natural progress by these abstractions of blood. It is, therefore, with great reason that the generality of veterinary practitioners condemn bleeding in mild and regular strangles, and only consider it as admissible when it is complicated with bronchitis or pneumonia.

As to the contagiousness of strangles, M. Mousis follows the opinions of Solleysel, Bourgelat, Paulet, Brugnone, Gilbert, and Bosc; and he might have equally cited the more recent ones of Gohier, Gasparin, and Toggia, and especially the experiments of the last author, which must have very great weight in the determination of the question.

It results from the experiments and observations made by M. Mousis, that he submitted 23 horses, mules, and asses, to the contagion of strangles. Of this number, 13, of the age of two or three years, became glandered—10 by cohabitation for a period differing from two to nineteen days, and 3 by the injection of the discharge of strangles into the nostrils during a period of from eight to ten days. The other 10 submitted to these experiments were unaffected. Four of these ten had cohabited with horses with strangles from twelve to fifteen days, and six of them had received into their nostrils, for the space of from two to eight days, the matter which was ejected from the nose of the sick horses.

On the whole, M. Girard resumes—and we perfectly agree with him,—the notions of M. Mousis with regard to the treatment of strangles are wild and theoretical; but those that have reference to the contagiousness of the disease are very interesting. He has demonstrated that strangles is often, if not always, contagious; and this agrees with the experience of Toggia. Nevertheless, it is desirable that new experiments should be made, and new facts collected, in order to decide this very serious question.

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## ON VARIOUS POISONOUS PLANTS AS THE CAUSE OF BLAIN, &c.

*By Mr. W. MOGFORD, Guernsey.*

Dear Sir,—I HAVE been much interested in perusing your Review of Professor Gellé's Pathology of Cattle, and more particularly the case described in your No. for August, pp. 575-6.

About thirty years ago, when in extensive practice in Devonshire, I often met with cases of blain, and I long suspected that it was occasioned by some herb, but never was able to trace it until August 1836. I had three horses of my own, and one belonging to H. Shepherd, Esq., of this island. He was a very healthy horse, about fourteen years old. He had been blistered, and, when the blister was quite covered with hard scurf, he was put into a meadow in the most swampy part, and tethered down, and moved twice a-day.

A few days afterward I visited him, and perceived an immense discharge from the mouth; I should judge almost a bucket full in the course of a few hours. I had him immediately brought home. I bled him, and opened his bowels with oil and aloes made into a drench with boiling water and salt of tartar, and washed his mouth frequently with tincture of myrrh. By this mode of treatment, he was fit in a week to be turned out again.

I expected that my own horses, which were in another part of the meadow, would have been affected. I narrowly watched; but seeing nothing of it for two days, I tethered a thoroughbred colt, three years old, in the same place, in the morning, and visited him in the afternoon, when the saliva was running as it does in common cases of blain. I moved him, but did nothing to him. The next day the discharge stopped, and two days afterwards the inflammation subsided.

I put the other two horses in the same place; they were affected in the same way, and it passed off in the same manner.

As I was at the time much engaged, and knowing little of botany, I offered a reward of five shillings to the country people if they could find me any herb which produced the effect. One was brought to me, which I gave to an experienced botanist, but nothing poisonous belonged to it. As the field was about four miles distant from my residence, I gave it up, and all thought of the matter, until reading Professor Gellé's account. A few days since, riding by the field, and perceiving that no cattle had been put into it since it had been mown, I thought it a good opportunity to try if I could find any herb on the spot where Mr. Shepherd's horse had been penned. I found a species of crowfoot, a very few bits of which convinced me of its effect on the mouth.

I am thus particular in giving you the full detail, using that excellent motto of M. Gellé, "Let every one tell that which he knows, all that he knows, and nothing but what he does know." If writers in general, instead of beating about the bush, and raising up a dust by begging and stealing, such as Mr. Hinds, &c., were to adhere to this rule, how much better for science!

In your valuable work on Cattle, you mention the crowfoot as a poison. It appears to affect the mouth and eyes. The following



remarks have been given to me by F. Lukis, Esq., M.D., of this island:—

Nearly the whole of the species of *ranunculiaceæ* are well known to possess very great acrimony.

On their being handled or applied to the more delicate parts of the surface of the body, itching is excited, followed often by tumefaction, and even vesication and ulceration. When chewed, they irritate the mouth, producing ulceration of the tongue, with copious salivation. The free inspiration of the effluvium arising from them when bruised or heated, produces headach, dizziness, vomiting, &c. The experiments performed by C. Krupp, of Vienna, on dogs, prove their virulence, and establish, among the most powerful, the

*Ranunculus Scelliatius*  
*Illyricus*  
*Bulbosus*  
*Acris*  
*Arvensis*  
*Thora*

The *Ranunculus flammula* is particularly so, and, when swallowed in small quantity, produces vomiting, spasms of the stomach, and delirium. Haller states the *Ranunculus Alpestris* to be the most virulent of all.

The common meadow crowfoot (*Ranunculus acris*) possesses virulence in every part of the plant; others in the root or leaves only. Cultivation lessens their power, which also varies according to the particular plant, situation of growth, &c.

Acids appear to increase their poisonous qualities, though lemon-juice, sorrel, and unripe currants, have been recommended, followed by mucilaginous drinks. Sugar, wine, and spirits, increase their properties, rendering them more hurtful. The ulcers produced are very difficult to heal, fetid, and the discharge acrid, &c.

You also mention the water hemlock (*Phellandrium aquaticum*) as a poison. The farmers of this island will not believe the leaves to be so, though they say the roots are injurious, and even poisonous. I have seen them give it to their cattle, as food for fattening, in large quantities; but I have known it poison six horses, the causes of whose death I could satisfactorily trace to the herb in the spot where they had eaten it. Three of these cases happened in August 1826. It was a very dry season, and grass was unusually scarce; but in these instances the man saw them eat the roots as well as the leaves, and they all died. Being from home when the animals were attacked, I was unable to see the first symptoms, but was told by those persons who were present that they were seized with violent griping pains. The symptoms were, hanging the head very low, much stupor and sleepiness, with great

disinclination to move, and a very low and oppressed pulse. Its principal action was on the cæcum and colon, with an immense quantity of serum between its coats. In some parts the intestines were from two to three inches thick, in others marked with red spots, and in others in small ulcers.

If space permitted, something might also be said on the fools' or wild parsley (*Æthusa cynapium*). I have never known it produce death; but in the spring, when some horses will eat it greedily, I have known it purge very violently. It has also a peculiar effect on the nose and lips, causing deep cracks and ulcers, particularly on horses with white muzzles.

Prof. Gellé, in your number for September, page 647, supposes the ulcers and cracks to be occasioned by vipers. I would beg leave to say, that the disease is very frequent in this island, where there are no venomous reptiles or vipers; and I can prove, from numbers of instances, that it is occasioned by the animal grazing amongst the wild or fool's parsley. In order to give one case out of many, I have selected the following:—Captain Slade, of the Royal Artillery, being alarmed at the condition of his favourite horse's nose, sent for me. After examining the nose, I asked if he had not been grazing amongst the parsley. We went to the field, and found the plant in abundance, and, that being removed, the horse had no return of ulceration or cracks on the nose.

P. S. I hope, before the appearance of your number for November, to be able to send you a few cases on calculi, which I think may throw some light on that subject, unless your correspondents should, in the mean time, supersede me. I do this in accordance to your request, dated in your number for September, p. 594.

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## AN ACCOUNT OF THE PRESENT EPIDEMIC AMONG CATTLE.

*By Mr. WELTON, of Ingatestone.*

Dear Sir,—It being your expressed wish, in your last valuable Periodical, that all who had an opportunity of studying the character of the present epidemic among cattle would forward you their experience, I beg to inform you that I have had, since the 1st of August, 1839, sixty-four cases, in all of which, except one, I have been successful, she having, previously to the attack, evident diseased lungs.

This malady in our neighbourhood has assumed a much more serious character than described by you of Mr. Rhodes's cows.

The earliest symptoms were, loss of appetite, or, perhaps, an inability to feed through tenderness of the mouth—staring of the coat, and if possible turned the contrary way, particularly about the head and neck—drivelling continually from the mouth, followed by inflammation and vesication of the membrane lining the mouth and tongue, and, in several instances, with sloughing of the gums—the membrane and the papillæ of the tongue coming quite off—the smell from the mouth being extremely offensive—a considerable discharge from the nose and eyes—catching up and shaking one or other of the feet, the fore as well as the hind ones—all the feet being at times equally affected with pustules containing a serous fluid, and spreading around the coronet and between the claws—an indisposition to move, evidently from the soreness of the feet. In one instance, upon driving a cow into her house, when she trod upon the bricks which paved her doorway, the pain was so great, that she fell as though she was shot. They are always lying down, if not disturbed. They cease to ruminate, and there is a considerable or total suspension of the milk. The teats, with few exceptions, were studded with deep-seated pustules, containing the same kind of fluid that was found in the feet and mouth. I have not seen a symptom of garget in any of the cases. The respiration was slightly increased, attended with a painful grunt. The urine was high-coloured, the fæces dark, but of their natural consistence, attended by (when purged) a considerable quantity of blood.

*Treatment.*—I commenced by giving xii oz. of sulphate of magnesia, and vi oz. of sulphur, in each case, which operated freely, but not too much in any of them. This was followed by tonics, and we were careful to keep the bowels gently open. The only application I found necessary for the pustules was a weak solution of the chloride of lime and some astringent ointment.

*Remarks.*—Could I have known, when the disease had first shewn itself, that it would have assumed an epidemic character in this neighbourhood, I should have taken notes of the cases as they occurred, but now I can only give you a general description. As to the cause I can say nothing. The cows have been attacked in every situation,—over mown meadows, and meadows not mown—upon low meadows and uplands. I have but little faith in atmospheric agency, and yet there is something very singular connected with these 64 cases, which all occurred within the space of three miles. It spares neither age nor sex in its attacks, but the heifers and the old cows have been the greatest sufferers. It is, in my opinion, highly contagious, being communicated from one



to another by certain effluvia, and I know it to be so by inoculation. A cow having a solitary pustule on her teat, suckled a calf: the calf had a pustule, and one only, formed precisely where the gum pressed upon that of the cow's teat. This I took particular notice of; indeed, I have, more than once, thought that it resembled the cow-pox in many respects.

The *pigs*, on the first farm to which I was called, have suffered much from the same complaint. Almost every one of them has been lame, and some, I believe, have lost their toes. They had the same medicine, and the symptoms were much the same as those which were seen in the cows.

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## STRANGULATION OF THE INTESTINE BY THE SPERMATIC CORD REMOVED BY AN OPERATION.

*By Mr. MEGINNIS, Horsham.*

ON the 31st of July, 1839, I was sent for in the morning by Mr. Wood, of Wornham, to see a steer of his, 2½ years old, that had first appeared to be unwell yesterday, and was much worse to-day. He was generally lying down, but when he was standing up, was uneasy—frequently attempting to kick his belly—shifting his hind legs backwards—and endeavouring to sink his back as low as possible. His countenance had a peculiarly dull expression. The pulse 48. Give 12 oz. of Epsom salts.

7 P.M.—The medicine had not operated, nor could any fæces be felt on introducing the hand into the rectum—the pulse was 50—and the mouth and horns hot, and the muzzle dry. I began to suspect that he was what is called a *net bullock*, and, on careful examination by the rectum, I found that to be the case. I then informed the owner how the case stood, and the only chance that I had of saving him, namely, by cutting into the abdomen, and removing the cord. He consented to the operation, and told me to do exactly what I thought proper with the animal. It being, however, then too late in the evening to perform the operation, I gave him 8 ounces of linseed oil, and left him for the night.

Aug. 1st., 7 A.M. He was worse—the pulse was 60, and weak—the extremities cold—the respiration hurried; he was unwilling to move, and the countenance was expressive of pain. Perceiving that there was no time to be lost, I cast him on the near side, and secured his legs. I then made an incision at about the middle of the right lumbar region, and on the introduction of my hand could distinctly feel the cause of the illness, for the spermatic cord had

formed a ring so close round a portion of the small intestines, as to cause a stoppage; and this having, probably, existed for a considerable time, the coats of the intestines were very much thickened. I then brought up the cord sufficiently to divide it, and took out a portion; after which I closed the opening with three stitches of tape, dressed the wound, and let the steer up again.

11 A. M.—He is very uneasy, lying down, moaning, and grinding his teeth; the respiration hurried, and the pulse 70 and wiry. I endeavoured to bleed him, but could only get three pints of very thick dark-coloured blood. Give an ounce each of the tinct. of opium and the spirit of nitrous ether in gruel, and two ounces of laudanum in a clyster. Give gruel every four hours.

6 P. M.—Some fæces have been discharged, relaxed, black, and with a considerable quantity of mucus. Treatment as before. Continue gruel and enemas.

*Aug. 2d.*—Pulse 58. Nose dry—body warm and comfortable—bowels relaxed: drank three gallons of water, and ate a few mouthfuls of grass. Give compound spirit of nitre and gentian in gruel—dress the side, and continue enemas, &c.

*3d.*—Pulse 55. Horns hot, nose dry, body open—the fæces fetid, and coated with mucus. Give tr. opii, sp. nit. æth., and aniseseed in gruel. Dress side.

*4th.*—Still better—pulse 50—nose moist, body comfortably warm, appetite improving—medicine the same as before:—continue gruel.

*5th.*—Pulse 40. Drops of dew now stand on the muzzle—he eats better, and ruminates. Continue treatment.

*6th, 7th, and 8th.*—Improving—occasional laxative medicine, and constant dressing of the side.

*17th.*—Quite well, except that the wound in the side is not perfectly healed. Turn him out with the other beasts.

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This species of internal hernia is far more prevalent in the northern districts of Great Britain and Scotland than in the south of England, with the exception, perhaps, of Herefordshire. It is the consequence of tearing asunder the cord or spermatic artery in the act of castrating the young ox. Some of the gelders effect, or used at least to effect, this by gnawing off the testicles with their teeth. The cord then violently retracts, passes into the abdomen, and there undergoes considerable inflammation and enlargement, and sometimes false membranes are formed, in which portions of the small intestines are occasionally entangled.

There is an account of this in a German publication, by Her Anker, of the Canton of Berne, which may not be uninteresting to our readers. M. Anker states, that “this species of internal hernia

is of frequent occurrence in Switzerland, and is too frequently fatal; that the hernia depends on the peritoneum being torn in the pubic region, and the spermatic cord, or the cord or substance by which the testis was suspended in its scrotal cavity, remaining floating within the abdomen. A portion of the small intestine finds its way through the opening made in the peritoneum by the act of violent leaping, or some other cause, and becomes entangled with and tied by the cord. They are lean and ill-fed cattle that are most liable to this accident."

"The characteristic symptoms of this lesion are, suppression of the fæcal discharge—the voiding of some portions of the intestinal mucus, often mingled with a little blood, sometimes of a considerable consistence, and as large as an egg. The animal, on getting up, stretches himself, and makes the back a little convex in the usual manner, and then retracts it all at once, so that the vertebral column assumes a concave form. On examination by the rectum, the displaced intestines or the spermatic cord seem to be violently stretched, and feel very hard. The animal is continually shifting his posture; the hind leg particularly, on the side on which the hernia exists, is continually moved forward. Sometimes that limb is palsied, at other times its sensibility is exceedingly increased, and particularly at the commissure of the thigh with the subpubian region."

"The principal cause of this disease is bad food—hay and grass from marshy meadows—the construction of the stables with too great an inclination of the floor—hard work in the mountainous regions of that country—the manner in which the animal sometimes reposes and gets up from sleep on an irregular surface."

The prognosis is unfavourable, if the accident happens immediately after the ingestion of food—if the belly is swollen, and tense—if the ears, the horns, the nose, or the thighs are cold—if the pulse is small and accelerated, and felt with difficulty—if the respiration is stertorous, and the mouth pale, and filled with a glairy fluid."

"The disease lasts three, five, or even nine days. The animals to which much liquid is given, although of a calming and emollient nature, die the soonest; but that which most accelerates the fatal termination is the treatment by excitants, and the continual moving about which many veterinary surgeons order."

"The cure can only be effected by an operation; for which purpose the animal is thrown, with his flank supported against a wall. Then, the hair being shaved or cut off from the right groin, the operator raises a longitudinal fold of it, and, holding it in his left hand, he divides it from above downwards, making a wound sufficiently large to admit of his hand. In the same way he cuts through the abdominal muscles, taking care to divide the costo-



abdominalis muscle—the external oblique, or the ilio-abdominalis, the internal oblique, from above downwards or obliquely forwards, and the incision penetrating to the peritoneum. The peritoneum is opened very cautiously, just sufficiently to permit the introduction of two fingers of the left hand, which may serve as a guide for the scalpel with which the opening thus commenced is to be enlarged. The right hand being now smeared with some oleaginous fluid, and introduced into the cavity of the abdomen, perforates or tears the epiploon which is interposed between it and the intestines. The situation of the hernia being now discovered, the operator withdraws his hand, in order to grasp the instrument with which he intends to operate.”

“This instrument is in the form of a crotchet, about five inches in length, two and a half of which are occupied by the blade, and this is curved and buttoned, cutting with its convex edge. He covers this cutting edge by means of his thumb and fore finger, and carries it forward on the spermatic cord, a little below the strangulated intestines if he can, and there he effects a section of the cord. He finishes by completely disengaging this portion of the intestines from every thing with which they were entangled, carrying the index finger over and through their various convolutions. He then assures himself that there is no hernia on the other side of the abdominal cavity. Last of all, he reunites the lips of the wound with two or three sutures, dresses it with some ointment, places on it a compress, and, over all, a broad band which encircles the body. In twenty-four hours he removes the dressings, in order to cleanse the wound with warm water. By the next day a slight suppuration has usually commenced; after which little remains for the surgeon but attention to cleanliness.”

“After the division of the great oblique muscle, there will usually be a sudden and considerable arterial hæmorrhage; but it almost immediately ceases spontaneously, and requires no ligature.”

“While the hand is introduced into the abdominal cavity of the animal, as he thus lies before the operator, he is usually perfectly quiet, and expresses scarcely any pain when the spermatic cord is cut. When the bladder is touched, which is a thing inevitable, he begins to urinate in a full stream.”

“After the operation the belly usually begins to swell: it will then be necessary for the practitioner to be on his guard, that the intestines do not escape through the incision which he has made. Then also the animal may have sudden shivering fits, and his coat may stare, but this does not last longer than from three to five hours. The swelling of the belly, however, often continues four or five days. The first voiding of fæces usually takes place about eight hours after the operation. Some gastric symptoms, however,

and occasionally of a serious character, do not disappear until much later."

"For a few days after the operation the food should be confined to mucilaginous drinks. If there is fever, small doses of sulphate of soda, or of magnesia, should be given; and, still later, arnica, gentian, and wormwood."

"At some period after the operation, varying from fifteen days to three weeks, the beast may usually return to his accustomed work."

This account is followed by forty-four cases of this disease which had come under M. Anker's notice.

A case of laceration of the *broad ligament* of the right side of the uterus of a cow is appended to this work, and which caused considerable strangulation of the intestines. There is also a case of intorsusception of the small intestines. In both cases he operated with success.

## CASE OF SPASM OF THE DIAPHRAGM.

*By JOHN TOMBS, Esq., Pershore, late Bengal Artillery.*

*September 22, 1838.*—A gentleman residing ten miles from this town was out hunting with Lord Segrave's hounds on a young mare: in the pursuit of a fox he jumped a wall obliquely downwards, which caused immediate and violent beatings of the heart of his mare, as he supposed from being too fat and out of condition. He galloped her four miles afterwards to the end of the chase, and rode her home, a distance of ten miles. I saw her in the evening; her head hanging—pulse 40—violent spasms of the diaphragm, the noise being distinctly heard several yards off. She lay down, and appeared in great pain. I bled her to syncope, gave aloes and ol. ricini, and fomented the sides.

23*d.*—Spasms violent—pulse 60—stands up—downcast countenance. I bandaged the extremities, again bled copiously, and gave aloes, opium, and digitalis. In the evening she lay down—the spasms ceased for a few hours, and then returned with unabated violence, and continued until death, which took place on the 26*th*: she fell down exhausted a few hours before she died, and was in dreadful pain. The beating of the diaphragm was awfully loud. During her illness she lost four gallons of blood; had digitalis and opium in large quantities, aloes ʒij, croton oil drops xx, ol. ricini 2 quarts, and injections repeatedly: the left side, where the noise was mostly heard, was blistered extensively, and both sides of the body continually fomented. Her bowels were not

acted upon by this enormous quantity of purgative medicine: in fact, she had no motion from the time that I first saw her.

*Post-mortem appearances.*—The contents of thorax healthy—the diaphragm pale and flabby—the intestines and stomach free from inflammation—the contents of the bowels, from the stomach to the rectum, were soft and liquid. If the animal had lived a few hours longer, she would have been purged, which object I greatly wished for, as the ignorant are of opinion, regardless of the disease, that animals, when ill, must inevitably die unless something goes through them. The liver and spleen were healthy—the left kidney a little diseased—the posterior vena cava, from the diaphragm backwards, was distended with very black blood—the iliac veins were distended to bursting—the bloodvessels of the cellular tissue covering the psoas muscles were ruptured; a small quantity of coagulated blood was found there. I fancy that serious mischief was done to the mesenteric bloodvessels, or why should the intestines have been so obstinately constipated?

In order to shew that the diaphragm is more frequently affected than many people imagine, I will relate the singular case of a filly that evidently died from rupture of the jejunum caused by tape worms.

March 15, 1836, I was called in the evening to a yearling blood filly in this neighbourhood: at 5 P.M. she was galloping about, apparently well; at 6 P.M. she was seen lying down and rolling over and over. I saw her at 8 P.M., with a deplorably dejected countenance—the head hung down—the legs and ears of an icy coldness—pulse 50, and weak—great tension of the abdomen—pressure on it causing intolerable pain, but otherwise perfectly insensible. When her companions were removed from her, she took no notice of them. I bled her; gave ol. ricini and opiates, and had the abdomen fomented.

At 9 P.M. I observed some very peculiar symptoms which lasted a few minutes, viz., violent convulsions of the diaphragm and intercostal and abdominal muscles. She was left at 12 o'clock, and at four in the morning she was found lifeless.

*Dissection.*—On dividing the linea alba, several large tape worms, swimming in liquid fæces, presented themselves to view. The contents of the bowels had escaped into the cavity of the abdomen. The colon and cæcum were exempt from these pernicious vermin; but there was a strange quantity of them in the small intestines. About the middle of the jejunum there were two orifices of great size for such an intestine, and through which the worms escaped. The gut at this part was thickened and inflamed. The colt had done badly for some time.



## ON REDWATER AND PUERPERAL FEVER.

*By a Veterinary Surgeon.*

[This paper is from an old and valued correspondent, who has more than once favoured us with some observations on these diseases of cattle. It would be with considerable pain that we refused to insert any communication from him; but we tell him plainly, yet not offensively, that we do not like anonymous letters. They ill suit with the present advanced state of our art.—EDIT.]

I FEEL disposed to contribute a few lines to your next number on two cases and post-mortem examinations, by Mr. Tombs, designated Redwater and Puerperal Fever: not with the slightest wish of entering into a controversy with him, but, as the above diseases are not so well understood as they should be, I would have a reconsideration and communication of facts by all who have the means of observing these maladies.

Having premised thus much, I would beg to state that the former is not a case of the disease known by me under the name of Redwater, in which, beyond question, there is a discharge of blood to a great, and sometimes fatal, extent; and, as it appears to me, in consequence of a relaxed state of the kidneys. I use the term "*sometimes fatal*," because I consider it as the effect of the disease, rather than the disease itself, and other causes operating, in many cases, to produce death, some days after the discharge of blood has ceased.

There are, it is true, some cases of the *specific* disease in which the urine is of a dirty-brown colour, but which, nevertheless, contains blood, or, at any rate, albuminous matter similar to it, and which I have proved to my satisfaction by means of heat. The disease in question, as is well known, is rarely seen in its true form, except in particular districts, among which I know not whether the neighbourhood of Pershore is numbered: but, for want of farther proof, I must consider this as a case of congestion of the liver, a disease very common among horses, and I see no reason why it may not occasionally be met with among cattle, though I have not made a post-mortem examination of such a case. In addition to this, I have never met with congested liver in very many accounts of redwater cases.

The latter case was, very likely, one known as puerperal fever, though there is wanting a description of many symptoms, and, at any rate, the early ones. The autopsy, so far as it was carried, is satisfactory; but why were not the brain and spinal cord examined, in the membranes of which, I have no doubt, would

have been found cause enough of the effects exhibited before death in the form of inflammation and effusion. Such, however, I have uniformly found to a greater or less extent.

If this be the case, what becomes of the theory of "Disease of the motor-organic nerves," &c. &c.?

You have heard from me before on this subject, when I stated that other diseases were often mistaken for this disease; and, to the present time, I do not think that the characteristic symptoms, or the cause of this fatal malady, have been well defined. Who will next attempt the task?

As to treatment, I shall be as short as Mr. Tombs, who, no doubt, did right, or, at any rate, probably could not have saved either patient; but as the butcher had to do with them, I suppose that the flesh was eaten. Was there any reason why it should not be in these and similar cases in which it is desirable to make the best of a loss, or to save a part? I should like to know the opinions of others on the matter.

Your's, &c.

A VETERINARY SURGEON.

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## CASE OF PARALYSIS OF THE RECTUM IN A MARE.

*By Mr. G. M. MARSHALL, York.*

HAVING read a case by Mr. Daws, in the June number of THE VETERINARIAN, of paralysis of the rectum, I send you another very similar to it, except that it was a fatal one.

*Feb. 28th, 1838.*—A bay mare, aged, had been running as a wheeler in the Manchester day-coach during a fortnight. The horse-keeper complained that, for the last three or four days, she could not stale properly. She was now sent to us for examination.

*Symptoms.*—She makes frequent attempts to void her urine, but a very small portion only can be evacuated at a time. Some fæces pass from her involuntarily whenever the rectum becomes much distended, the remainder having to be removed by the hand, after which the sphincter ani remains partially relaxed. The motion of the tail is entirely lost. The pulse is 84, and she is frequently looking round at the flanks. She does not evince any pain when pressure is applied to the loins or sacrum, nor is there any lateral motion of the hind quarters.

*Cause.*—Not known. Probably she has either fallen backward, or received a violent blow on the croup.

*Treatment.*—Venesection lbs. x. Laxative medicines, enemata, setons and mustard cataplasms over the loins and sacrum, fresh sheepskins over the loins and croup, and the introduction of a bougie,

not having a catheter, into the bladder, but by means of which I could not evacuate any water.

This treatment was continued with little variation until the 9th of March, the pulse ranging from 38 to 46. A large œdematous swelling now made its appearance, extending over the chest and abdomen. I scarified it, and gave her a tonic ball daily to the 13th, consisting of gentian root with caraway and gentian powder. The swelling disappeared under the influence of the scarification and the tonic medicine. The appetite also returned, but there was a reeling gait, referrible to the hind quarters.

She remained in this state until the morning of the 16th, when she suddenly died. She had fed well, and been in tolerable spirits on the previous day, but the paralysis had not been in the slightest degree removed.

*Post-mortem examination* on the same day.—The viscera of the thorax were healthy, as were those of the abdomen, with the exception of the mesentery and the under surface of the colon, which were much injected. The kidneys presented a slight blush of inflammation. The coats of the bladder were much thickened, and the mucous coat bore marks of the most intense inflammation. It was completely black and empty. I regret that the spinal canal was not examined.

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[This was essentially a case of inflammation of the bladder. The earliest symptom was, "that she could not stale properly;" and the most striking lesion after death was thickening of the parietes of the bladder, and the black hue of its mucous coat. That this, from proximity of situation, should interfere with the functions of the rectum, can be easily imagined. The bladder will very rarely be affected by the disease of any portion of the contents of the abdomen, except the urinary passages; but many an organ will sympathize with morbid affections of this viscus. —EDIT.]

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## THE VETERINARIAN, OCTOBER 1, 1839.

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Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

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A CIRCUMSTANCE of some interest to the veterinary profession has taken place since the publication of the last number of our Journal,—the removal of the office of Principal Veterinary Surgeon from the head Professor of the Royal Veterinary College, and the



bestowment of it on the senior cavalry veterinary surgeon, Mr. Cherry. Did this imply any stigma on the professors of the Veterinary College, we should be sorry that this change has taken place; but there is nothing of the kind in the slightest possible degree. It is the removal of the direction of certain circumstances, connected with the management of the cavalry regiments, from those who, as lecturers on the anatomy and diseases of domesticated animals, can be supposed to know but little of the cavalry service, to one—the senior officer,—and whom many years of actual service must have made the most competent judge of the management of this department.

On the principal veterinary surgeon will now devolve the duty of ascertaining the competence of the candidate for the commission of veterinary surgeon in the respective regiments, when a vacancy may occur. Plain common sense ought long ago to have whispered that the veterinary teacher in any school was the last man in the world who should have been permitted to decide on the competency of his own pupils. He might act impartially and honourably; but it would be said of him, and truly said, that he could scarcely be free from certain prejudices for or against certain individuals. To an indifferent, but a competent person—a veterinary surgeon—unconnected with any school, should be entrusted the duty of reporting on the capability of the candidate.

If this would be true when there was but one veterinary school, it became more essentially necessary when there were rival schools. It would not be listened to for a moment that the professor of one of these schools should be permitted to sit in judgment on the pupils of both. We would take it for granted, that he would endeavour to act honourably; but he could not be free from powerful prejudices, of which he, himself, would scarcely be conscious: or, at all events, he would render himself liable to be accused of acting partially, and the reputation of his school would suffer, were his motives as pure as light. This is a false position in which the professors of the rival schools ought never to be placed, and from which, as men of proper feeling and of honour, they would be glad to retire. On these grounds, we are free to confess we are glad that such a change has taken place. We would not have so false a stigma rest on either school. Let every thing regarding our profession be open and honourable.

We enter fully into the feelings expressed by Mr. Mayer in a subsequent letter. Still we are not quite satisfied. We will take it for granted that the senior veterinary surgeon will honourably discharge his duty to the best of his power; but we would rather have some associate and controlling influence connected with his. We would have a control over certain prejudices for or against

certain individuals, which may too powerfully influence his mind, and these arising either from private dislike, or from the disbelief in certain theoretical tenets, which he may a great deal too much connect with good practice. We would have a board of veterinary examiners, easily constituted, and the greater part of them always within hail, or summoned at a short notice. It should consist of the principal veterinary surgeon as president, the veterinary surgeons of the three household regiments, and of the regiment that might happen at the time to be quartered at Hounslow. To a board thus constituted there could be no objection, and from it there should be no appeal.

Almost all the letters which the Editor has received since the publication of the last Journal contain allusions to the present state of veterinary affairs. Almost all of them express their thankfulness and their exultation at the commencement of useful reform in the Pancras school. The extended instruction on the anatomy and physiology and pathology of every domestic animal—the increased knowledge of veterinary pharmacy and the *materia medica*—the longer term of study, and the more mature age of the pupil;—these are points on which the writers dwell with delight and gratitude: but the necessarily inefficient lectures on pathology which must result from the whole of the stupendous task being thrown on one man, and the altered character of the school and of the profession which must result from the diminution of the fee, are circumstances respecting which they express much doubt and regret. We will not extract the introductory or the concluding paragraphs which numerous letters on various other subjects contain, but insert at length three letters devoted expressly to these subjects. They are given in the order in which they were received, it being premised, that the first of them was written after reading the account given in the Mark-Lane Express, and before our September number could have been received.

## ON COLLEGE AFFAIRS.

### LETTER I.

THE Editor of THE VETERINARIAN has invited us to express our "feelings and wishes" in reference to the present situation of affairs at the College.

The College is generally spoken of as a place devoted to the instruction of pupils, and, when first founded, it was not intended to be any thing more. But, in order that it might accomplish this object, it was necessary to make arrangements for receiving patients. The pupils could not be taught without them, otherwise it is probable they would not have been considered. Unfortunately, the end seems to have been too soon forgotten in the means. The College became, and has long been, a hospital *more* than a school.

As a hospital, its name among those most capable of judging has never stood very high; but with that we have nothing to do. If the subscribers are

content with the way in which their work is done at the College, let them be so; we have no need to interfere. It will be time enough for us to give our opinion on that subject when our opinion is demanded.

We are more at liberty to speak of the College as a school of instruction. The manner in which this part of its duty is performed concerns, very intimately, both the public and the profession, and we may surely feel and express an interest in both without any impropriety.

Veterinary practitioners of some experience must be the best, indeed the only fit judges of what is right and what is wrong in a course of veterinary instruction; and their advice and suggestions ought purposely to be sought rather than rejected or neglected. This, then, is one of my wishes—that some contrivance may be invented and adopted for obtaining from veterinary surgeons their consideration and opinion of matters relating to veterinary instruction. On a subject so important to humanity and to the public good, the directors ought either to be fully qualified for the office they fill, or they should seek the assistance of others who are better qualified. To dispense with both qualification and assistance where the interests of others are so much concerned, is certainly to act very unfairly or very heedlessly.

To veterinarians—the only judges—the College has been long and notoriously deficient as a school of instruction. By some late arrangements, I believe, it is now intended that the pupil shall be taught the anatomy and pathology of ALL domestic animals. This is a very considerable reform, and it is much to be desired that efficient means,—teachers and patients,—be obtained for carrying it into execution.

Until now the instruction has been confined altogether to the anatomy and pathology of the horse. The College has gone no further; but even in regard to this animal the instruction has been very defective. Every experienced veterinarian will, I think, agree with me on this point. The pupils leave College without having seen a single case of many diseases which are quite common both in town and country practice. If the young practitioner has previously or subsequently to his College residence been apprentice or assistant to an experienced veterinarian he has little to regret. But if he has learned nothing save what he has seen at College, he is soon sensible that he has not half learned his business, even in regard to the horse only. Patient after patient comes to him with diseases which he has never seen, and which he can neither name or treat. After many blunders and much serious vexation, he learns by degrees all that he should have learned at College; and if he succeeds in business, he very often has to thank chance and favourable circumstances more than skill. But very often he fails to establish a business, not so much for want of employment, as for want of skill.

The short residence of pupils at College is one cause of their incapacity. Those who have not been either an apprentice or assistant ought to attend three or four years: a good veterinarian can hardly be made in a shorter period.

Constituted, however, as the College is at present, it *cannot* give the pupil a good education. Anatomy may, indeed, be taught and learned as well as need be; but not so with pathology. The terms upon which patients are admitted exclude a great many cases of disease. The subscribers are nearly all men of wealth. Their horses never, or very rarely, have the diseases which are common to those of very slow and very fast work. Coaching, cart, all horses subject to harder work, and grosser negligence and greater ignorance than the rich man's horses have ever met with, are liable to diseases which the College student never sees, however long his residence.

To remedy this, some effort should be made to enlarge the College practice. The student should have an opportunity of seeing disease as it exists in the horse and the cow of the poor man. This, I think, could be easily managed at



little trouble, and almost no cost. Notice should be given that, at a certain hour every day, advice and medicines may be obtained gratis at the College by all those who are not able or not willing to pay for them. This would be a great boon to many a poor man, who, not able to pay a skilful veterinarian, must either trust to nature, or try the remedy of some smith or groom. In every large town there are plenty of men who would thankfully take advantage of the privilege. The plan is so obviously beneficial to the students, that I think its utility need not be much insisted on. The receipts of the College would not, in any degree, be diminished, and the cost for drugs and bandages would not amount to ten pounds a-year. If the professors could not afford that sum, they could raise the fees sufficiently to pay it. The drenchings and operations being all performed by the pupils, under superintendence, would render hired assistants unnecessary.

If the Governors are really anxious to make the College an effective school of instruction, some plan of this kind will certainly be tried. But it seems all along to have been their aim to make the College an hospital more than a school; and, if they continue to do so, they ought, as conscientious men, to alter the notice prefixed to their list of subscribers.

JOHN STEWART.

Glasgow, Aug. 11, 1839.

## LETTER II.

### *To the Members of the Royal Veterinary College.*

Gentlemen,—THE events which have taken place during the last two months, and of which, I trust, you have not been unconcerned spectators, induce me, through the medium of this Journal, to direct your attention to one or two particulars. And I feel the more constrained to this duty from having had (in the brief review of “The past and present State of Veterinary Science”) the pleasure of directing your attention to various points connected with the education of the veterinary surgeon.

Anxious as, I trust, we all are for the proper and efficient education of the veterinary student, you cannot but hail with sincere and heart-felt joy those arrangements which have recently taken place within the walls of the Royal Veterinary College. But are there no regrets to mix with this joy? Is it not with deep anxiety that we see arrangements made calculated to mar the prospects so beautifully opening upon us?

It is to these arrangements, and to the best mode of obtaining the removal of them, that I entreat your attention. I shall necessarily be very brief, as the points have been so ably handled in the last leader of this Journal. The points I allude to are:—The fact that no distinction is made between the educated apprentice or son of the veterinary surgeon and the groom, blacksmith, &c.; the injustice done to Mr. Dick’s pupils; the enormous duty laid upon the professors, and the smallness of the fees. Upon calm consideration, you will agree with the opinions expressed in this Journal,—that great injustice will be inflicted upon the profession at large if these plans are carried out.

It appears to me requisite that the opinion of the profession at large should be expressed on this subject, and a memorial should be presented to the Governors, suggesting the following alterations:—That indentures from every student of his having spent three years in the pursuit of veterinary knowledge be required at his examination. I make this remark, because I think it would be impolitic to suggest any plan which would make invidious distinctions between the pupils at College. I am sure it will be thought by you

to be preferable to suggest an arrangement which, while it makes no indvidious distinctions, insures and prescribes a preliminary education. The other points are so self-evident that I cannot add more than to offer them to your serious consideration :—That persons having attended other veterinary schools, and having obtained certificates of their attendance and examination after a shorter residence than others, be presented with their diploma on paying the usual fees ;—That the number of professors and the amount of fees be increased.

Before I conclude, I just wish to allude for a moment to the report of Mr. Cherry being appointed to a situation relative to the introduction of veterinary surgeons to the cavalry service, and to express my decided opinion that, however competent this individual may be for the situation, it is the duty of government to place it in the hands of a board of veterinary surgeons, such board to consist of those who are veterinary surgeons to the household troops ;—and no candidate to be appointed as veterinary surgeon to a regiment until he has passed such an examination by that board as shews him qualified for the situation he aspires to.

Trusting that these remarks will incite some of you, residing near the metropolis, and better qualified than myself, to take immediate steps to *respectfully* memorialize the Governors on this important subject, and assuring you that I shall be ready to lend my hearty concurrence,

Believe me to remain,

Newcastle-under-Line,  
Sept. 13, 1839.

Yours, &c.

THO. WALTON MAYER, V. S.

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### LETTER III.

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“Labor omnia vincit.”

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I presume that the improvements which are announced as having taken place at the Royal Veterinary College, as regards the education of the pupils, may be mainly attributed to your zealous and indefatigable exertions ; for, if it had not been for your strenuous efforts to support and maintain a veterinary periodical, public attention would not have been directed to those important branches of veterinary science, nor to the diseases of neat cattle and other domesticated animals, which appear hitherto to have been purposely avoided and shamefully neglected within the walls of our alma mater. Public opinion, the most powerful of all tribunals, has, at length, prevailed ; and that which was originally intended should be taught, but which was so studiously opposed and pertinaciously withheld, has, to a certain extent, been at length conceded.

The alteration which is to take place in the course of instruction at our national institution may be said to constitute a new epoch in veterinary science ; and I congratulate my brethren, that a much longer period of pupillage at the College is at length required, as it will necessarily enable future veterinarians to acquire a more extensive knowledge of their art.

By attending Assistant-Professor Spooner’s anatomical and physiological lectures on all domesticated animals, the students, of course, will have an opportunity of becoming anatomists and physiologists ; and as anatomy and physiology form the basis of pathology, succeeding veterinarians will, ultimately, be enabled to build up a noble superstructure, including every branch of veterinary science. Those pupils who intend to commence country practice will do well to acquire an intimate knowledge of the structure, functions, and economy of the mucous membranes and digestive organs, for, in cattle practice, the malady, in an overwhelming majority of the cases which come under

our treatment, is referrible either to the structural or functional derangement of these organs. With respect to the pathological department, I pretend not to doubt Professor Sewell's competency as it regards the horse: but when we duly consider the long period which that gentleman has held his previous situation—the important duties with reference to the horse which he has had to perform—the anxious zeal that was required to enable him to discharge them with his wonted ability, it must be admitted that his time has been too much occupied to enable him to become a proficient in the practical knowledge of cattle, and, consequently, his lectures on those highly important branches of veterinary science can only be regarded as theoretical. That such an onerous task should have been imposed on Mr. Sewell appears to me exceedingly extraordinary, and has the semblance of being an arrangement among gentlemen who are more anxious to go with the stream of plausibilities, than to advance the progress of practical veterinary knowledge.

Books are agreeable things from which we may gain the principles of an art, and the theatre a necessary place in which we may communicate them to others; but he who attempts to lecture from that alone which he has acquired by hearsay, or by reading, can effect but little good, and will, in all probability, find himself most egregiously mistaken, and with scarcely a pupil to attend to his speculative opinions. Every veterinarian who has had but a limited experience in cattle practice must be aware that the best teacher is unable fully to communicate pathological knowledge without long and attentive experience, and it can only be acquired through visiting the abodes of sick animals. There we recognize disease—watch its varying symptoms—mark their progress—prescribe medicines and appliances according to the indications of the case, and often effect a cure by such means as philosophy would not dream of. Hence the necessity of clinical lectures, and of previous deep acquaintance with the subject.

If the gentlemen who form the English Agricultural Society may be considered as the guardians of the agricultural interests, and really intend mutually to benefit the farmer and the veterinarian, they should not cease to agitate the question of veterinary education until they procure from the governors of the College an infirmary for cattle, and a competent lecturer on their diseases. There could be but little difficulty in finding among our own body a person who has been accustomed to cattle practice, and on whose brow time has furrowed many a wrinkle of experience—a man who would be enabled efficiently to discharge the important duties which would necessarily devolve upon him.

The initiatory fee is too low to remunerate four lecturers; but who would begrudge an additional ten pounds, if that would insure an education that would enable the student to practise his art in the different classes of domesticated animals. If those veterinarians who reside in small towns, surrounded by a grazing country, are to move in and maintain a respectable station, they must necessarily be taught, and fully so, to practise the art in all its branches, or they will be driven to pursue some other avocation foreign to the character and the interests of an honourable and liberal profession.

My dear Sir, faithfully yours,

SAMUEL BROWN.

Melton-Mowbray, Sept. 15, 1839.

These are exceedingly valuable letters. They touch on somewhat different points—they take somewhat different views of the subject—but they all harmonize, and cannot fail of making a deep impression on veterinary practitioners everywhere, and on the Governors of the College. A more decided expression of the sen-



timents of the whole veterinary body is undoubtedly much to be desired. This periodical is at the service of those from whom its Editor has lately received the proudest testimonial that could be conferred upon him. Will those who feel an interest in the matter kindly favour him with their opinion. It shall be recorded in the next number of THE VETERINARIAN, or more promptly communicated to our metropolitan brethren. The next collegiate session will commence about the middle of November, but, long ere that, the important questions now agitated should be set at rest.—Y.

## REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hon.

*A Manual of Pharmacy for the Student of Veterinary Medicine.*  
By W. J. T. MORTON, Lecturer on Veterinary Materia Medica, &c. Second Edition.

It is with great pleasure that we announce a second edition of this most useful work. It has not yet become quite so big as "our friend Turner's body," but it has increased in size more than a third, and, what we had scarcely thought to have been possible, is in more than that proportion valuable to "the student of veterinary medicine."

The introduction to the present edition, giving a rapid sketch of the Properties of Matter and the mode of conducting the principal "Pharmaceutical Operations," and "the Action and Doses of Medicinal Substances," are clear and concise, and most useful to those for whom it was written; but the principal excellence of this edition consists in the honest recording of every improvement in the veterinary materia medica, and the advantage which Mr. Morton has taken of the good feeling which seems at present to be rapidly pervading the whole veterinary body—*may no evil spell separate those who should be thus united!*—and embodied the opinions and practice of the members of our profession, with regard to almost every medicament. We refer to one or two additions, taken almost at haphazard:—

### "CREASOTON, *Creasote*.

"Internally given it is a stimulant and a tonic. Its greatest use is as a topical remedy, being employed in the form of a lotion, a liniment, or an ointment to foul ulcers, such as occur in farcy and glanders to cancerous sores, such as foot-rot, canker and thrushes;

and some cutaneous affections, as herpes, mange, &c.; also for the checking of caries, excessive suppuration, and the repression of fungous granulations. As glanders in the human subject has yielded to it in the hands of Dr. Elliotson, and, still more recently, this formidable disease has been effectually combatted by Mr. Ions, V.S., in the case of his son, it seems to be worthy of a trial in this affection in the horse, being both given internally and applied locally."

"SECALE CORNUTUM, *Ergot of Rye.*

"The ergot of rye is a fungus or parasitic plant, which locates itself in the ovary of many of the grasses, and most commonly on the rye. Its activity appears to reside in its investing tunic. It acts as an excitant to the parturient uterus, causing contraction of it, and therefore should not be exhibited until the regular throes are considerably diminished, and the pauses between them have somewhat increased. The dose for either the MARE or COW may be from ʒij to ʒiiij in powder, combined with some carminative, which may be repeated every hour; to the SHEEP, from ʒi to ʒij; and to the DOG, from 5 to 10 grains."

STRYCHNIA, *Strychnine.*

"This has been found of service in cases of paralysis in the horse and chorea in the dog. Its action is very powerful, and it calls for caution. The dose for the horse may be from 1 to 3 grains twice in the day, combining it with the vegetable tonics: that for the dog from  $\frac{1}{8}$  to  $\frac{1}{4}$  of a grain. Its influence is conjectured to be on the motor tract of the spinal cord, which it powerfully stimulates, and thus restores the lost power of the muscular system.

"When long exhibited, or if given in too large a quantity, the limbs will be seen to tremble, and convulsive paroxysms will be induced by the slightest noises. Fifteen grains of it have proved sufficient to destroy the horse."

We recommend this work with confidence.

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*Cattle Pathology, or a Treatise on the Pathology of the Ox.* By P. B. GELLÉ, Professor of the Royal Veterinary School at Toulouse. Huzard, Paris, 1839.

THE Professor now gives a very interesting extract from a work published by Signor Toggia, of Turin, in 1810, on the Diseases of Cattle. He is describing those affections of the parotid glands, whether simply inflammatory or scrofulous, in cattle and in swine.

A portion of the history of this will be quite new to some of our readers, and all will derive instruction from it.

They are indolent tumours, gradually and slowly increasing, and which form cords or chaplets round the neck, behind the ears, and under the lower jaw. They are irregular, *bossed*, some hard and scirrhus, and others soft, and occasionally both varieties of structure are found in the same gland. Their adherence to the surrounding parts increases with their density, and which, occasionally, is almost that of marble. I have seen a large chaplet of these scrofulous tumours under the jaw of a pig, and adhering as closely to it as if it were composed of bone, and resembling more an osseous concretion than a simple scrofulous tumour, and yet the animal became as fat as if nothing had been the matter with him. These tumours never suppurate unless they are wounded or injured, and they never disappear on account of the characteristic inertia of their structure, until they become scirrhus, and then they degenerate into cancer.

They are hereditary, but they are principally caused by a humid atmosphere, unwholesome food, want of exercise, and wet and ill-ventilated sties. They are not contagious; they do not attack the teats. Unwholesome food is the principal cause,—the digestion is vitiated, and the chyle not well elaborated.

They do not appear to suffer any inconvenience from this scrofulous affection. They eat, and drink, and grow, as usual; and the veterinary surgeon should not undertake the medical treatment of them unless it is forced upon him. Indeed, if the existence of the disease seems to have little connexion with condition, or the want of it, it would be folly to attempt difficult or painful operations upon them, or to commence a course of medical treatment, which, besides some necessary expense, would lessen their condition and value. The veterinary surgeon should always have for his object the interest of the proprietor, and he should never attempt the cure of these diseases, except the extraction of the tumour is easy, or the animal is young, or the tumour diminishes his value, as, perhaps, would be the case in oxen from four to six or seven years old, and in the country in which they are bred.

If the proprietor will have a cure attempted, M. Toggia recommends the knife, followed by the iron at a white heat; and he censures, and with reason, the employment of all caustic and arsenical compositions, for the disease is almost sure to reappear. After the removal of the tumours by the knife, he recommends mild but plentiful nourishment, as carrots, parsneps, beet-root, &c., and the occasional administration of the bitter tonics, as gentian. He has also seen benefit derived from the internal use of iodine. He con-



cludes by warning against the confusion of these tumours with goître, or indolent enlargement of the thyroïd glands.

The Professor now proceeds to the diseases of the pharynx in cattle, whether consisting of simple inflammation of the pharyngeal membrane, or accompanied by enlargement of the tonsils, or any other part of the pharynx.

### *Inflammation of the Pharynx.*

Although less susceptible of impression than the nasal cavities, or the larynx, the mucous membrane of the pharynx is frequently inflamed. Acrid food—cold, and, perhaps, unwholesome air, are direct causes. It is common among working oxen, especially if the spring or the autumn is cold or rainy. Every atmosperic change may produce it; but it is oftenest the consequence of previous inflammation in the mouth, the nostrils, or the larynx.

Here the Professor gives one of his own graphic sketches. "This disease consists of inflammation of the mucous membrane which lines the roof of the palate and the pharynx. It soon spreads to the neighbouring parts, and produces intumescence of the subjacent cellular tissue, particularly of that which surrounds and composes the parenchyma of the amygdalæ or tonsils, the salivary glands, and the lymphatic ganglions. It is frequently complicated with inflammation of the mouth, the salivary glands, and the larynx."

"The principal symptoms are, difficulty of deglutition—redness of the back of the mouth—ptyalism—swelling of the throat, the parotids, and the space between the bones of the lower jaw. The papillæ of the tongue and the amygdalæ are so much inflamed that the tongue is swelled, and can neither be protruded from or retracted into the mouth. Pharyngitis is always a serious disease in the ox, especially if it is complicated with that of the pituitary membrane and the larynx. The inflammation lessening the naturally contracted air-passages of the ruminant, produces difficulty of breathing and the danger of suffocation. It is always accompanied by a peculiar guttural cough—one sound of which should warn the practitioner of the real character of the disease. It is sometimes preceded by fever; but it never exists long without being accompanied by very intense fever."

The serious character of the disease depends on its intensity, and its complication with laryngitis. The abstraction of blood should be prompt, and repeated if there is not a manifest remission of the symptoms. Emollient poultices should be applied—frequent soothing and refreshing drinks—aperient clysters—gruel only for food, and the animal should be carefully and warmly clothed. Active

purgatives are not indicated. They would be injurious rather than beneficial; but aperient doses of the Epsom salts should be given to the extent of eight ounces daily, or sufficient to accomplish the intended purpose. Setons and blisters should soon succeed to the poultices. It would not be bad practice to commence with the blisters in a great many cases. The blister or sinapism should consist of mustard, with some linseed meal, in preference to the cantharides. The mustard is more speedy and effectual; but one thing should be always borne in mind in the treatment of these diseases, viz., not to apply the revulsive until the general and local inflammation is somewhat abated, and especially in young, sanguine, and irritable animals.

A chapter is devoted to "Diseases of the Œsophagus," a subject which is very summarily treated by our writers on Cattle Pathology. The first division is

### *Inflammation of the Œsophagus.*

He remarks that "the altogether-special structure" of the œsophagus of ruminants renders it less susceptible of irritation and inflammation by means of the substances that are swallowed than that of any other animals. It being, almost entirely, fleshy, flabby, exceedingly dilatable, and having its mucous membrane covered by a thick epithelium, all co-operates to favour the passage of the food, and to render this tube almost incapable of receiving injury. It is only injured by substances that are accidentally arrested in their passage through it, or by injudicious attempts to remove these substances, or by external violence, or by its participating in the maladies of the parts immediately above or below it.

Œsophagitis may be contemporaneous with or consecutive to inflammation of the stomach. It may exist in a chronic state. The dysphagia, which some authors consider as this malady in a chronic state, and others, with more reason, as a nervous affection, has been hitherto observed in the horse alone. No disease is with so much difficulty detected. The animal cannot express, as the human being can do, the pungent pain which he may occasionally feel along the course of the œsophagus. The difficulty of deglutition may be sufficiently visible. The alimentary ball may be seen to stop, after having passed into the gullet—it may be rejected by vomit. We may be able to ascertain the painful swollen state of the tube at a certain part of it, or generally.

The thirst may be great, notwithstanding the difficulty of deglutition, and although the liquid may be regurgitated through the nostrils and the mouth. The pulse may be full, and accelerated. Any, or all of these circumstances, might have arrested the atten-

tion of the master or the servants while the inflammation was in a recent state. Although there may be some obscurity in the diagnostic symptoms of œsophagitis in our domesticated animals, they may, without any great error, be stated as the following:—difficulty of deglutition—the regurgitation of a portion or the whole of that which had entered the canal—their arrest in some part of it—the swelling and hardness of the tube at some particular spot—the greater or less sensibility of the tube at that place—the exacerbation of the symptoms after the animal has drunk, or while he is taking drink—the almost constant absence of redness or heat in the mouth and the pharynx, and, finally, the greater or less meteorization of the abdomen.

In inflammation of the pharynx, on the contrary, there is tenderness of the throat, which manifests itself on the slightest pressure. Often there is enlargement at that region. There is always disgust of food, and redness and heat of the mouth, and a flow of saliva from the pharynx. It is not then easy to confound these two maladies.

We make no apology for the introduction of this theoretical reasoning—that in which the Professor does not, indeed, often indulge. The subject is a new and important one, and will help to illustrate the valuable memoir of M. Renault in another part of this Number.

#### *Schirrus and Cancer of the Œsophagus.*

Professor Gellé gives an interesting account of the former of these diseases, and for which he acknowledges his obligation to M. Dandrieu, a name not altogether unknown to our readers.

A ram of the common breed of the country was ill several days, without any apparent cause. He was rapidly losing condition, and had, during the last eight or ten days, vomited the greater part of the aliment which he obtained in the field. There was a slight meteorization of the paunch, which increased when the animal swallowed or ruminated. The act of rumination was not performed in a natural manner. The alimentary pellet did not reascend to the mouth until after repeated efforts, and it had imbibed a sufficient quantity of fluid, which was ejected from the mouth as soon as the pellet had arrived at it. Deglutition also was executed with much difficulty, and followed by a hoarse cough.

M. Dandrieu suspected some organic lesion of the abomasum, or the presence of some foreign body in the œsophagus. The more he thought of the case, the more he inclined to the latter opinion. He carefully examined the gullet, and he found, just where it entered the thoracic cavity, that this organ presented a hard indolent tumour, as large as a pullet's egg. At the moment of the



deglutition of every pellet of hay, it rested during a considerable period at that spot, which seemed to fatigue and annoy the animal, and it was not until after repeated efforts that the pellet passed into the rumen.

Turpentine frictions were applied to the part, and these painful efforts to swallow were in some degree lessened by feeding the animal with very thick gruel and potatoes boiled to a pulp: but, as this manner of feeding could not be continued for ever, and the swelling remained undiminished, the proprietor at length determined that the tumour should be extracted. The animal was thrown, and its limbs were tied. M. Dandrieu then made a longitudinal incision through the skin, in the direction of the œsophagus, and soon reached its muscular membrane, which was of a livid colour, and covered the scirrhus. The tumour was beneath the surface of the mucous membrane, and by its volume and its hardness, it had produced a projection into the canal, which in a great measure obstructed the passage through the œsophagus. "I completely isolated the tumour from the parts with which it was in contact," says M. Dandrieu, "and removed it. The two edges of the wound were reunited by two points of suture, and covered by a large pledget of tow moistened with brandy diluted with water. A bandage supported the dressings, and which was afterwards kept moist with vinegar and water. Two days afterwards the dressings were removed, and nothing more was done than to bathe the wound for fifteen days with a little warm wine. The wound was then healed, and the cure complete."

The pathology of the ox is not rich in facts of this kind: perhaps the following may not be uninteresting. The students of the French schools, after a certain standing, are permitted to have patients of their own under the occasional surveillance of a professor. There are reasons for and against this. Two of the pupils attached particularly to him, had, April 6, 1835, one of these patients. It was a cow with a considerable tumour stretching across the upper part of the neck, at the situation of the jugulars, and more considerable on the left side than on the right. After having carefully examined it, they gave her a few leaves to eat, part of which she swallowed, but the rest was rejected with a considerable quantity of saliva. They thought that some foreign body was entangled in the œsophagus, founding their belief of this on the confession of the proprietor, that he had fed his cows on raw carrots and potatoes, and the refuse of the garden. They did not reflect that, having been gradually developed, the tumour could scarcely be attributed to a foreign body. The cow had not eaten for the last four days; and this, in the opinion of these young surgeons, indicated approaching death. An operation that would relieve was, in their opinion, of

absolute necessity; and, besides this, like all young doctors and veterinary surgeons, they were desirous of doing something. They warned the proprietor of the possible danger of such an operation as they must perform, but they assured him that, without an operation, the case was hopeless.

He consented, and then our two youngsters tied the poor cow to a stake, and, having secured her as well as they could, they commenced their proceedings. Fortunately for them, the patient was unusually quiet. One of them effected an incision on the left side of the neck, two or three inches in length, parallel to the situation of the left jugular, and corresponding with the centre of the tumour. The jugular and the carotid were held aside, while the operator destroyed with his finger the cellular adhesions, and came directly on the tumour, which he opened with the stroke of the bistoury. To his great astonishment nothing issued from it but a little blood and pus and sand and earth, the whole imperfectly mingled together, and easily distinguished from each other. A new incision enlarged the one already made, and also divided the mucous coat of the œsophagus, giving issue to the saliva, and causing numerous eructations. They dilated the opening a little higher up, and then found that the focus or cause of the tumour existed between the muscular and mucous membranes, between which, from some slight wound, these matters had insinuated themselves, but could not return.

The wound was perfectly cleansed with warm water—the lips brought together, and retained by a suture, and the patient was confined to liquid food.

8th.—An enlargement as hard as a stone surrounded the incision: it was scarified deeply, a little blood escaped, and the wound was properly dressed.

10th.—The wound exhaled an almost insupportable odour. The flesh was white and livid in various places. These spots were powdered with charcoal, and washed with diluted spirit. The wound now took on a more healthy appearance, and on the 20th the wound into the œsophagus was almost healed, but the tumour remained, and was, if possible, becoming harder. The pointed cautery was freely applied to it.

30th.—The œsophagus is healed. The cow can eat green meat, and ruminates; and on the 12th of May was discharged, completely cured.

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## ŒSOPHAGITIS; OR ACUTE INFLAMMATION OF THE MUCOUS MEMBRANE OF THE ŒSOPHAGUS IN THE HORSE.

*By M. RENAULT.*

IF there are some maladies with regard to the situation and nature of which the observant practitioner can scarcely be deceived, there are others, and their number is not small, the diagnosis of which is embarrassing to the veterinary surgeon, whether because certain complex phenomena render the real nature of them obscure, or they have been badly and incompletely described by our authors. The embarrassment will be greatest, and the chances of error more numerous, if the affection which we are called upon to treat has neither been observed nor described by any one, and forms no part of medical science, and when, at the same time, the organ affected has a structure and uses which would not lead us to expect the existence or even the possibility of a disease of that organ.

Such is inflammation of the mucous membrane of the œsophagean canal in the horse. This affection, so rarely observed and so little known in human medicine, is without an example, so far as I know, in our veterinary records; and in that I see nothing to create surprise. No membrane is less exposed to the action of irritating causes; and even under the influence of causes direct, immediate, and long acting, no membrane, on account of its peculiar organization, is so little susceptible of inflammation. I have seen horses and dogs that had been destroyed by the most violent poisons, and yet, on examination, the œsophagus has not presented the slightest trace of disease, although the gastro-intestinal mucous coat has been corroded in various parts. Pieces of potato, turnip, beet-root, &c., are not unfrequently arrested in their passage down the œsophagean canal, and they remain imprisoned there a considerable period of time, and are, at length, extracted through an aperture made into the œsophagean canal; yet, even then, no inflammation of the membrane has marked the situation of the intruder.

One circumstance I particularly recollect. A little bât horse had swallowed a potato, which was arrested in its course about half way down the œsophagus. The poor animal had been two hours under *the care* of the farrier, who had attempted, in every possible way, to force it down; and, at length, when I was sent for, he had placed a piece of wood on the right side of the œsophagus, and opposite to the potato, and was hammering away with a mallet on the left side, in order to crush the intruder. Just at that moment I arrived, and put a stop to this brutal, fatal violence, and, trembling with fear lest I should tear a membrane which I had seen so treated,



I introduced a flexible willow stick into the gullet, and presently succeeded in forcing the half-macerated substance into the stomach. What was the result? In five minutes afterwards the animal began to eat and to drink with an appetite and a nonchalance which would not permit me to believe that the mucous membrane of that tube had sustained any serious injury. The farrier assured me that he had again and again crushed the roots which had been thus arrested in their progress down the gullet, and that, five minutes afterwards, the patients had eaten and drunk without the slightest apparent inconvenience.

The case which I am about to report is of a nature calculated to fix the attention of the veterinary surgeon, for it is new in our science; it is the only one in our records. On this account, I shall enter far more minutely into the details of the case than I otherwise should have done.

The patient was an entire horse, five years old, of middle size, and a strong constitution. He was brought to our hospital on account of supposed colic; the colicky pains had continued about twenty hours. They were not continuous, but the animal was alternately tranquil, or in a state of extreme suffering. As soon as they remitted, the patient began to eat his accustomed food. He had now been in this state nearly twenty-four hours, and had been bled twice. Emollient drinks and mucilaginous injections had been administered; friction had been applied to every part of him; he had been warmly clothed, and he had been walked out. The whole had only produced a very slight remission of the pain. Surprised at the obstinacy with which all our efforts were frustrated, I requested that the horse might be sent to our hospital.

It was on the evening of the 21st of April that he arrived. A slight redness of the mucous membrane was apparent, and that colour was, also, on the conjunctiva, mingled with a yellow tint; the mouth was rather hotter than in a state of health; the tongue was foul; a slight augmentation in their frequency was the only change that was apparent in the beating of the pulse, or the respiratory movements. From time to time the animal lay down, and rolled himself rather gently, sustaining himself as long as he could on his back; then he rose, and remained for a little while standing, pawing the ground with his feet. He would then lie down again, and roll as before. At one time he was tranquil during nearly twenty minutes, and then new colicky pains attacked him, and there was the same painful routine of lying down, rolling, getting up, and pawing with his feet. This continued until the following morning. During the remission of his pain he had frequent erections of the penis: the urine, thick and yellow, was twice evacuated in a small quantity, but the bowels had not acted.

Exploration, by the rectum, of the bladder, the kidneys, the inguinal rings, and the pelvic reflexions of the colon, presented nothing unusual in their relations to each other, their position, or their plenitude; nor did this examination indicate the presence of any foreign body. The belly was soft, and sunken.

*Diagnosis*, uncertain.

*Treatment*.—Bleeding to the extent of 5lbs.; friction frequently repeated; strong mucilaginous drinks sweetened with honey, and administered every two hours; frequent injections; the most restricted diet.

A remark made by the pupil to whom the horse was entrusted during the night attracted my attention, but did not influence my diagnosis: "Every time that, during the actual spasm, we endeavoured to administer a drink to the patient, the symptoms were immediately aggravated; and, when the drink was administered during the remission, the spasms immediately supervened, and lasted some minutes beyond their usual duration." This fact appeared to me very singular, and I could not explain it; but, too late, and, when the post-mortem examination had shewn me the seat and nature of the affection, I could see how significant it was.

22d.—The symptoms are exasperated; it is not so much that the colicky pains have increased in violence, but there is scarcely any intermission. The animal cannot, at any time, rest more than five minutes; but, generally speaking, he is up and down every instant, without being able to take a moment's repose. Sometimes, however, he places himself upon his back, and retains that position, with his fore limbs flexed, as long as a minute: then he lies on his side—sometimes on one side, and sometimes on the other—his neck stretched out, except that the head is occasionally elevated and depressed upon his neck, with an expression of countenance dreadful beyond my powers of description, and assuring us how dreadful were his sufferings. When these movements take place, he regards his flank with an anxious gaze, and then begins again to agitate his limbs, and to beat himself sadly. Notwithstanding all this, the pulse was neither quick nor full: the heavings of the flank were not more accelerated or violent than on the preceding evening; the mucous membranes were of the same colour, and the animal occasionally searched for something to eat. His thirst was particularly urgent, and he eagerly plunged his muzzle into the thin gruel which was presented to him; but he had scarcely swallowed a few mouthfuls than he suddenly stopped and dashed himself down. The colicky pains appeared as certainly when he attempted to take his gruel as when his drenches were forced upon him.

The rectum was again explored, but without any light being thrown upon the case. The animal used every effort to repulse the hand of the explorer, and the rectum was violently contracted upon the arm. Still no evacuation of fæces, and the urine continued to be yellow and oily.

The *Diagnosis* still uncertain, only that, without any precise or accurate reference, I stated it to be my opinion that we should find some lesion in the upper digestive passages.

*Treatment.*—As there began to be slight meteorization, a little ether was added to the mucilaginous drinks. The injections were repeated in half the quantity every two hours. The frictions were continued, and an occasional short walk, for the spasms would not admit of a long one. At two P.M., I ordered the drinks to be discontinued, since the colicky pains appeared so invariably after the administration of them; for the same reason, the white water was also suppressed. In order, however, to assuage the thirst of the animal, his mouth was often gargled with a mucilaginous decoction, to which a little honey was added. In the evening, four pounds of blood were abstracted.

23d.—The fits of colic continue, with the same characters as on the preceding evening. The movements of the flanks, which had previously exhibited only some increased frequency, were now much more accelerated and *jerked*. The pulse was full, quick, and strong—the conjunctiva most deeply injected—the mouth clammy—the tongue charged with a brown deposit on its surface, but its tip and its edges of a vivid red—the loins had also acquired a degree of inflexibility. Deglutition, always painful, was now become more difficult. On presenting a lock of hay to the animal, he took it, but with a degree of nonchalance slowly masticating it; and then, when he would swallow it, the elongation of the upper part of the neck, and the expression of his countenance, shewed the dreadful pain which accompanied the passage of the food through the pharynx and the œsophagean canal. After each deglutition one or more pandiculations\* followed, and frequent yawnings: the head was again stretched out, yet partly turning round over the neck, as if there still remained something to be forced down. After a few seconds this ceased, but only to be renewed when the next portion of food was attempted to be swallowed.

\* It is difficult to translate this word. Even Hooper, who attempts every thing of this kind, is content with the term yawning. It would have been better expressed by the word *bâillemens*. It is a peculiar species of yawning; a more than usual protrusion of the fore limbs, and drawing back of the head and the trunk, and stretching out of the hind limbs. It is distinct from the common yawning of laziness; it is the indication of extreme fatigue, or it ushers in some aggravated state of disease.—Y.



A very important symptom, which we now began to observe, was, that some of the food, after being swallowed, was returned through the nostrils, mixed with a little white-coloured mucus. The colic became less intense as night approached.

*The Diagnosis* uncertain; but, observing the extreme difficulty of swallowing, and the torture that was evidently expressed when either fluids or solid food reached the stomach—considering also the rejection of portions of the food after it had been swallowed—I expressed an opinion that the stomach would be found slightly inflamed, and, particularly, that it would be distended by a mass of solid or liquid food.

*Treatment.*—Let the gargles, and the frictions, and the walking and the warm clothing, be continued. Let a portion of emetic tartar be mingled with the injections, and let the inside of the thighs and the fore-arm be gently rubbed with a solution of the same. All fluids were now interdicted.

The night would have passed with comparative quiet, had not the patient experienced some violent colicky pains, from having taken some gulps of the fluid which had been used as a gargle, and which some of the pupils had left in a vase at the door.

*24th.*—In the morning we observed, along the guttural sulcus of the fore part of the neck, an undulatory movement, which some had, at first, attributed to a *venous pulse*, but which was soon recognized as produced by the antiperistaltic contractions of the œsophagus. We were not permitted to doubt of the accuracy of this surmise, for, as soon as it terminated, the animal returned by the nose certain mucous secretions, more or less abundant, and sometimes charged with fluids and portions of solid aliment, exhaling a strong acetous odour. When the patient was preparing to lie down, he no longer, as on the preceding days, threw himself on his back or on one side, but he sat on his haunches, stretched out his neck, after many unavailing attempts as well as he could, and frequently executed the decided process of deglutition, as something existed in the pharynx or the œsophagus, which he vainly endeavoured to swallow. After this, and doubtless fatigued by his position, he suffered himself to slip down on his litter, and lay on one of his sides, his head always stretched out in front, and he uttering sharp and repeated cries whenever a convulsive contraction forced him to bend his neck.

His respiration was plaintive, and more frequent and jerking than on the preceding evening. The artery was distended, and the number of pulsations 74—the pulse was hard and rebounding—the beatings of the heart were exceedingly strong—the conjunctiva loaded with a reddish-brown infiltration—the mouth ex-

ceedingly hot—the tongue almost blackened—the loins preserved their inflexibility. As he walked, his hind limbs did not appear to be perfectly under his command, but dragged a little after him. The walking did not accelerate the respiration.

*Diagnosis.*—The exploration of the pharynx and of the cervical portion of the œsophagus not presenting any thing to account for the singular phenomena which I had witnessed, I continued to think that the stomach was the chief seat of disease—that it was distended by solid or liquid food, the presence of which had excited inflammation. That which induced me to trace it to distention of the stomach was, that, if I lowered the head of the animal, and pressed with my knee the hypogastric region, a quantity of fluid escaped from the nose, the odour of which sufficiently proved that it came from the stomach.

*Treatment.*—The state of the pulse and of the mucous membranes induced me to abstract four pounds of blood. The injections and frictions with emetic tartar were continued. In the course of the day, the animal, who had not dunged from the commencement of the disease, twice voided a small portion of very hard fæces, coated with mucus. His thirst was excessive, and we gave him a portion of mucilaginous fluid mixed with honey. He drank it with avidity, although evidently with pain. He had, however, scarcely taken a quart of it, ere he was seized with colic more violent than ever, and at the same instant returned through the nostril, and without effort or convulsion, the whole that he had drank. As he then appeared to search for food, we gave him, towards the evening, a handful of hay, which he took, but with no great eagerness, and, having masticated it some time, he dropped it, after several useless efforts to swallow it. During the mastication the flow of saliva was very great.

In the night he was very much agitated, and he was almost continually eructating. He several times uselessly attempted to void his dung. The extremities were alternately hot and cold, and the colicky pains continued almost without intermission. Towards morning he became a little calmer.

25th.—With the exception of the colic every other symptom was aggravated—the respiration was louder—the movements of the flank accelerated—the pulse irregular, strong at the heart, and about 87 in a minute: the animal was melancholy and depressed—his walk was staggering—fluid issued from the nose at the least pressure on the side, or when, as he took his slow and feeble walk, he bent his head in search of a little grass. We gave him something to drink, but the fluid no longer escaped from the nose after he drunk, but while he was drinking; and if we explored the

œsophagus immediately afterwards, we could feel that it was filled with the liquid which he had swallowed, and which had not been ejected from the nostrils.

*Diagnosis.*—The same as yesterday.

*Treatment.*—The same as yesterday, except the bleeding.

During the night he had partial sweats, particularly about the tracheal region of the neck.

26th.—The symptoms unchanged, except that the colic was not so frequent or so acute. The small quantity of fluid which he essayed to drink was visibly arrested in the œsophagus, which, in proportion as the quantity of food augmented, was distended, and formed, in the inferior part of the depression occupied by the œsophagus, a cylindrical projection, very visible to the eye. Percussion on this projecting part gave the precise feeling of a fluid underneath, and it only needed to press from below upwards to cause the fluid to ascend, and escape through the nasal cavities.

*Diagnosis and Treatment* the same.

27th.—The colic diminished in frequency and intensity, but the other symptoms were aggravated.

The night was tolerably calm until about two o'clock in the morning, when the horse began to roll and to beat himself more violently than he had hitherto done. He would not continue standing a single instant; his cries were dreadful, particularly when he was ejecting any liquid matter from the nostrils; and these came now almost continually stained with blood, and with an acid smell more and more penetrating. In this state of horrible suffering he remained until nearly five o'clock in the morning—the pulse inexorable—cold sweats all over the body—the extremities icy-cold—the respiration deep and tremulous, and the expired air cold. From five to seven o'clock there was comparative tranquillity, and at seven o'clock our patient died without a struggle.

He was opened three hours after death.

I shall say nothing of the lesions of the spleen, the liver, or the lungs, but confine myself with the morbid lesions, which constituted the principal disease, and which, in fact, destroyed the horse.

*The Mouth.*—There was nothing remarkable, except the black tint to which I have already referred when describing the symptoms.

*The Pharynx.*—We could discover, through the epithelium which covered the mucous coat, the vivid red tint of the membrane. This epithelium, which was easily detached from the membrane which it covered, was pierced by eight or ten rounded ulcers, of a deep brown colour, and which just penetrated into the body of the mucous membrane.

*Œsophagus.*—Examined exteriorly, this tube exhibited great soft-



ness and flaccidity, and its diameter was more than triple its natural dimensions. It was opened throughout its whole extent, and there escaped a liquid *melange* of water—the farina of barley—mucosity and blood; and we were compelled to use a great deal of water, in order to see the exceedingly remarkable changes of the mucous membrane\*, particularly in the thoracic portion of it.

The epithelium, white and thick, which covers the whole of the internal face of the mucous membrane of the œsophagus, was almost entirely destroyed in this portion of the œsophagus. Where it still remained, it was disposed in longitudinal striæ—a kind of whitened protrusions, disposed in salient and parallel lines, and occupying the summits of the plicæ, of which the mucous membrane is naturally formed. It was thick and friable, detaching itself from the body of the membrane with the greatest facility. Between these straight bands of the preserved epithelium, and on the large surfaces where it had been destroyed, appeared the mucous membrane, the red-brown colour and the deep injection of which formed a striking contrast by the side of the dead white of the epidermic bands. Here and there, the mucous membrane itself appeared to be destroyed, and the eye distinguished the denuded fibres of the muscular membrane, in the spots corresponding with that destruction. There were certain points where numerous ecchymoses between the fasciæ of the muscular membrane could be discovered. These ecchymoses, of a deep tint, were especially evident in the white portion of the membrane in the neighbourhood of the cardia.

The adhesion was so slight between the two œsophagean membranes, that, in the portions of its extent where the mucous membrane still preserved some consistence, it required only a very slight pull to separate it from the muscular membrane. The cellular tissue, usually so lax, which united them, represented a thick bloody net-work; so great was the injection of the vessels which permeated them.

In proportion as we approached the superior part of the œsophagus, these changes, although sufficiently evident, were not so marked. The denuded portions of the epithelium were not so extensive. It was destroyed only in circumscribed spots, assuming the appearance of superficial ulcers of variable size, from that of a one-sol to that of a five-sols piece. The mucous membrane which formed the bottom of these erosions had the same appearance and

\* The Professor here, as throughout the whole of his able history of this case, calls the cuticular membrane of the œsophagus the mucous membrane, because it is the lining membrane of this tube, and thus occupies the situation of mucous membrane, and because it is, in fact, furnished with a mucous secretion from the follicular glands beneath.—Y.

the same characters as in the thoracic portion, only it was less friable. As to the rest, in the cervical portion, as in the thoracic, it sufficed only to rub a little on the epithelium in order to detach it; and I cannot better compare the laminae which were thus detached, than to the lamellæ which compose the lucid cornea, when we have detached them from one another, and are examining them separately.

*The Stomach.*—This viscus was moderately distended by a liquid of the consistence of bouillie, and which resembles the farina of barley diluted with water. The mucous membrane of the right sac was only a little redder than in its natural state.

In the *left sac* were the same characters as had been observed in the superior part of the œsophagus, except that in no point was the epithelium destroyed; but especially and principally near the cardia it permitted us to distinguish through its thickness the red tint of the mucous membrane which it covers, and from which it is very easy to separate it. When exposed, the vessels which percolate the subjacent cellular tissue are so highly injected, that the blood transudes through their distended walls in a form resembling the red ley of claret wine.

No other portion of the intestinal tube presented any morbid lesion.

*Rec. de Med. Vet., Nov. 1834.*

[This singular and valuable case of inflammation of the œsophagus in the horse is partly selected because it stands alone in the history of the veterinary art; and also because M. Gellé is treating of the diseases of the œsophagus, and we wanted our sketch to be perfect. M. Renault deserves the thanks of the profession for the straightforward honourable way in which he records it, and his candid confession of having mistaken both its nature and its seat until almost the winding up of the affair. A very great majority of practitioners would have shared in the error, but all would not have avowed it. We are, however, very much inclined to think that in a much slighter degree it must have frequently existed, and a little teased us. Angular, and pointed, and irritating substances could scarcely have passed through this tube, and much less could the scientific operation of crushing the incarcerated body have been resorted to without producing inflammation of this cavity, the symptoms and effects of which were attributable to other causes. There are few of us who cannot now resolve certain cases of apparent dysphagia, and singular and puzzling spasm.

This case stands alone, and, we are inclined to think, would do so, were twenty other cases referrible to disease of the œsophagus placed on our records. Was there at any period of this case colic, pro-

perly speaking? It seems to be an utter impossibility that these excruciating pains, if they had reference to the intestinal canal, should have endured four or five days, and no stricture, no entanglement, no inflammation of any tissue, left behind. After having described the lesions of the œsophagus and the stomach, M. Renault adds, that no other portion of the intestinal tube presented any morbid lesions. All this difficulty of swallowing—these dreadful colicky pains as they were called, for want of a better name—these spasms, the part to which they were principally referrible the poor animal not being able to tell us—all these sympathetic affections of a disease of the œsophagus, are plain and dreadful enough when the scalpel displays them to view.

This is a portion of the animal rarely examined primarily, and, indeed, rarely examined at all; else I have no doubt we should find more alterations in this tube than we are aware. We should find it thickened, contracted, ulcerated, vegetating. We should have scirrhus, and abscess, and attenuation and softening, and gangrene and effusion. Can none of our correspondents furnish us with cases of these?

One circumstance cannot fail of being remarked, and to which we have more than once referred,—the strange difference in the treatment of the same disease by French and English practitioners of acknowledged and equal repute. This was, in the opinion of M. Renault, and would so have been considered by us, a case of spasmodic colic. We should have given our tinct. of pimento, or our sp. of turpentine, with the sp. of nitrous ether, and certainly our laudanum; and if the case did not readily yield, we should have abstracted our four or five or six quarts of blood, and have repeated this, if we saw occasion; nor should we have been long, when constipation was connected with the spasm, ere we administered our aloes or our oil; nor would our injections of similar ingredients have been omitted. But M. Renault—the flower of the French school—what does he do? He subtracts five pints of blood, and he gives his mucilaginous drinks sweetened with honey, and his *emollient* injections. On the following day a degree of meteorization appears, and then a small quantity of ether is added to the mucilage and the honey, and four pounds more of blood were abstracted. From the beginning to the end of the case there is no antispasmodic but this little ether—and no purgative at all. We impute no blame—it is the custom of the two countries; and a most marvellous difference of custom it is.—Y.]

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## SINGULAR LUSUS NATURÆ IN SOME PIGS.

*Communicated by Mr. JOHN ELLIS, of Liverpool.*

I MET with a strange collection of monsters the other day. Six sows belonging to a gentleman whose stock I attend, all produced young ones blind. The greater part of them were without any semblance of an eye—the orbit was quite empty. Some of them had four ears each. Only four of the whole lot lived: they were either brought forth dead, or they died immediately after birth. One sow could not farrow any of her young ones. They were three times the proper size, and in a state of decomposition.

As there was no prospect of otherwise saving the sow, I determined on performing the Cæsarean operation, which I have successfully done twice on the bitch. I did not find any difficulty in the operation, but I had delayed it too long, and she only lived three hours afterwards. I wish that I had operated the day before, for I am persuaded that the result would then have been different. These pigs were all got by one boar, but the sows were of different breeds.

There were no previous circumstances to account for these strange freaks of Nature.

## EXPERIMENTS ON DIGESTION.

*By Professors TIEDEMANN and GMELIN, of the University of Heidelberg.*

## THE CÆCUM.

THE remains of the food combined with the mucus of the small intestines, which is become more consistent, together with the different constituents of the bile that have been enumerated, pass by little and little into the cæcum, and remain a certain time in that reservoir, which may be almost compared to a second stomach. The cæcum contains,

1. *A Free Acid*, and in greater quantity than the ingesta of the lower part of the small intestines. This depends much, however, on the kind of food which the animal has eaten. In carnivorous animals this free acid in the cæcum bears an evident proportion to the difficult digestibility of the food, and, in the horse, to the quantity of corn which he has eaten.

In ruminants this free acid is found only in calves while they are fed on milk.

In sheep that have been fed on grass, the contents of the stomach effervesce on the application of an acid, and the fluid in the cæca of sheep fed on oats turn again to blue the reddened colour of turnsol. Carbonate of ammonia is produced by the distillation of the contents of the stomach in these animals. But, as the alkaline principle is less developed in the cæcum than at the extremity of the small intestine, and as the contents of the cæcum of sheep fed on grass shew themselves to be feebly acid, while those of the lower part of the small intestine are alkaline, it would appear that the cæcum of sheep secretes an acid which partly neutralizes the alkali.

We can say nothing positive of the nature of the free acid found in the cæcum. It appears to be acetic acid with a small portion of the hydrochloric.

2. *Albumen*.—This substance, of which we found but the slightest trace in the stomach, of which there was a certain quantity in the duodenum, and which evidently diminished as we passed along the small intestine, frequently re-appears abundantly in the cæcum and the colon. It may be obtained in a considerable quantity from the filtered fluid of the cæcum, in dogs that had been fed on the white of eggs; less was found when they had been fed on cheese or gluten, and none at all when milk, or bones, or flesh, had been given to them. In the cæcum of the horse that had been fed on oats, but not in the cæcum of him who had been fed on starch. It was found in the calf that had not been weaned—in sheep that had been fed on straw and oats—but not at all in those that had lived on grass.

3. *A Matter reddened by Chlorine*, hydrochloric acid, nitric acid, &c.—probably a peculiar secretion of the cæcum. It was found in dogs that had been fed on liquid albumen and bones; in a horse to whom starch had been given; and in calves and sheep.

4. *Fatty Matter, and the Colouring Principle, and Resin of the Bile*.—The fatty matter was found in a dog that had been fed on animal food and bread—a greenish-brown resin in a horse that had been fed on oats, and which resin, on being fused, emitted a smell similar to that compounded from excrement and bile—a green-brown unctuous resin in sheep that had been fed on straw—and in a calf, a portion of cholesterine, and the resin and colouring principle of the bile.

5. The following salts—carbonate of soda and of lime—the phosphate of soda and of lime—the chloruret of sodium, and the sulphate of soda.

*Theory of the Function of the Cæcum*.—The cæcum is, doubt-

less, a reservoir like the stomach, in which the last act of digestion is accomplished. Its resemblance to the stomach is particularly evident in the animals which feed on the larger vegetable substances—the ruminants, horses, the rodentia, the pachydermata, in whom we should challenge this viscus as a stomach, not only on account of its size and capacity, but its very form; but it is small in the carnivorous animals, and it is in a manner lost in those who live on fruits, and saccharine and feculent roots, as the bear, the badger, and the marten. We are justified by this in considering it as a kind of stomach, as Viridet had previously done. It is even a secreting organ. There are in this intestine, and its large and numerous glands, an acid and solvent fluid, which mingles with those portions of the food that are difficult to digest, and which seems to tarry a considerable time in the cæcum for that purpose. It contains also a little albumen, which we have found in the dog, but in greater abundance in animals that live on vegetable substances. The addition of the albumen contributes, perhaps, to complete the assimilation of the food dissolved by the fluid which this stomach contains.

Nature seems to make a last effort in the cæcum to extract every thing which the aliment can yet contain of a soluble nature; and it is in this viscus that the true intestinal excrement is produced under the form of a soft *bouillie*, of a brown or yellow-brown colour, and with its peculiar fæcal odour proceeding from a volatile oil, which, apparently, is chiefly secreted by the cæcum. During the greater part of the time, also, there is going forward in this viscus a decomposition of the matters which it contains, excited by the natural heat of the part, and accompanied by the disengagement of hydro-sulphuric acid gas.

*The Nature of the Contents of the Remainder of the large Intestine and of the Rectum.*—The remains of the food, after having remained during a certain time in the cæcum, and being there mingled with the acid fluid which that viscus secretes, are forced on by little and little into the rectum, by the vermicular action of the muscular tunic of that intestine and of the colon. They insensibly accumulate, because the sphincters of the anus oppose their expulsion. In proportion as they advance along the large intestine, and approach the rectum, their consistence increases, and also their dryness—their brown colour and the excrementitious smell. The portions of the remnants of the food which have been dissolved by the acid fluid of the cæcum are completely absorbed. During their passage they mingle a little with the mucus secreted by the glands of the large intestine. Finally, the undissolved residue of the aliment remains, with the intestinal mucus now become of



considerable consistence, the fatty matter, the resin, the colouring principle, and the residue of the bile, in order to constitute the excrement, properly speaking. The quantity, the consistence, and the colour of the excrement, vary considerably, according to the nature of the food; and the process of digestion finishes by the expulsion of it, from time to time, from the rectum.

Such, in few words, are the changes which the food undergoes in the large intestines. The nature of the contents of the rectum vary materially, according to the nature of the ingesta, and according to certain states and influences of the digestive canal.

The contents of the large intestine are strongly acid in the dog fed on liquid albumen—less so when the food consisted principally of gelatine; and in other dogs it was neutral. That from horses fed on oats reddened the tincture of turnsol. It was the same with a sheep that was fed on hay. In another that had been fed on hay and grass, the contents of the rectum were neutral, containing ammonia neutralized by carbonic acid in excess.

There was no albumen when the dog had been fed on milk or bones; but much albumen was found in the colon of a horse that had been fed on oats. It was found in a smaller quantity in a calf and sheep fed on oats; but none was discoverable in the dung of a sheep that had been fed on hay and grass. The fixed salts were very little different from those in the cæcum.

An analysis of the intestinal fluids of a horse fed on hay has shewn us, that, after its escape from the stomach, the portion of organic matter dissolved in this fluid is continually diminishing, while the saline substances that have been described are regularly increasing. This increase in the quantity of the salts was intended probably to preserve the organic substances from putrefaction, properly so called, during their long continuance in the intestinal canal. In order to explain this, we are compelled to admit either that the lymphatic vessels have the faculty of absorbing the organic substances in the intestinal fluids in preference to the salts, and to leave the salts in a manner untouched—or that the intestinal fluid which is secreted towards the lower part of the canal is more highly charged with these salts, and less rich in organic matter, in consequence of which it adds more and more of particular salts to the portion of alimentary matter not yet absorbed.

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ON THE VETERINARIAN—THE USE OF THE STETHESCOPE IN ORDER TO DETECT THE EXISTENCE OF PREGNANCY IN AN EARLY STAGE OF IT—AND THE OCCASIONAL USE OF BLEEDING IN RETARDED PARTURITION.

*By Mr. GEORGE BAKER, Reigate.*

THE advancement of periodical literature is one of the most striking characteristics of the present day, and one of the most powerful instruments in the diffusion of general and valuable information. Every important science or profession has its delegated organ to record its improvements, and to "spread the intercourse of its members from pole to pole." Now, the master spirits of the age, instead of devoting a life to one ample and voluminous work, for the exclusive praise of the learned and erudite, and that shall "wrestle with oblivion for their fame," have yielded to the earnest wish of a reading but time-saving public, and condensed into the smallest space the alcohol of their mighty mind: still it is the whole spirit brought to a quintessence—

"And oft is stronger than the strongest grape  
Could e'er express in its expanded shape."

Can we contemplate without admiration the galaxy of names that have enriched the periodical literature of our own day, in medical science, in theology, and the belles lettres? The combination of the varied elements of such mighty minds might furnish forth a literature out of chaos. Every man of talent has cast a stone to the cairn,—different indeed in form, in shape, and in substance, according to the regions whence it was obtained; but the union of the great mass has produced a wondrous and time-defying pyramid.

The wide diffusion of cheap periodicals treating on various subjects adapted to the comprehension of all classes,—articles on science so divested of all technicalities, so plain that "he that runs may read,"—this is another characteristic phenomenon of the

age we live in. I have been led into a digression from the subject matter of my paper, by having perused the interesting account recently given by Mr. Youatt of the rise and progress of *THE VETERINARIAN*. Its Editor is entitled to our warmest and most zealous support, for he has laboured unremittingly, through "evil report and good report," to uphold the character of the profession to which we belong; and the best manner in which we can evince our gratitude is by promulgating, through the means which his indefatigable exertions have secured to us, the several fruits of our individual experience and private practice. The increased correspondence of scientific men was one of the means named by the Chancellor of the Exchequer to reimburse the government for the loss that must be sustained by the operation of the penny postage; and when a letter will soon be conveyed from the Land's End to the wind-swept Orcades at so small a charge, I hope that it may induce our distant professional brethren to cast their mite into the general treasury, by recording the practice of their respective districts.

If we take a review of the state of veterinary science, and trace its gradual advancement, none of us can be insensible of the great advantages that have arisen out of the faithful publication of the transactions of the Veterinary Medical Association. It has brought before us many interesting facts, and excited those discussions that have greatly increased our knowledge, and reflected on many of its members the highest credit.

The kind good feeling with which the students have been met by the professors and practitioners has excited an interest and desire for professional advancement that must have a most salutary influence on the character and qualification of its future members. It has taught that knowledge cannot be obtained without study and great perseverance; and shewn that our profession is a sacred trust placed in our hands for the benefit of a hitherto neglected part of the animal creation. It is no longer in the hands of uneducated men. We are received by the public with that respect which accompanies the advancement of knowledge; and if, occasionally, prejudice should favour for a time the "itinerants," as they have been aptly termed by an enthusiastic member of our profession, they soon decline to the oblivion which such pretenders deserve.

Thus far has general science met with its honoured authors and supporters; but when we reflect on the names of Coleman, Lawrence, Clark, White, Blaine, Percivall, Youatt, Turner, Goodwin, Morton,—

" I'll name no more,  
For fear, like Banquo's ghosts, they reach a score"—

though there are many emulously treading in their footsteps who



have done so much for the honourable calling of our profession, let us study to maintain the high standard to which they have raised it.

The principal purport of this paper is to urge my professional brethren, and all who are zealous for the diffusion of improvement, to support the Editor of *THE VETERINARIAN* in his arduous task. The skill to maintain and the disposition to improve are the mighty characteristics in the regeneration of science or state. The Editor of *THE VETERINARIAN* has relinquished the more lucrative practice of the profession for the general benefit of its members; he has undertaken a difficult duty, and has a right to demand our co-operation. The tribute that has so recently been presented to him was the just payment of a debt of gratitude; but the obligation conferred on us remains to be yet more fully discharged by our earnestly supporting the object most dear to his heart,—the promotion, through his instrumentality, of the advance of our profession to general respect. What can better promote that unanimity so essential amongst us, than the means zealously advocated by Mr. Morton, “the unreserved communication of our professional knowledge?” Far be it from us, as a liberal and scientific profession, to stem the torrent of light that is now beaming upon us: let us rather concentrate its widely diffused rays into a focus, lest, “by broad spreading, it disperse to nought.” By making *THE VETERINARIAN* the source of diffusing, as from a nucleus, the rays of professional light, it will convey warmth to the kind heart of its supporters, and disseminate our transactions over both hemispheres, until it becomes “the sun and centre of a thinking world.”

May I now be permitted to allude to a subject which somewhat concerns myself? Some time ago I ventured to direct the attention of the Veterinary Medical Association to the use of Auscultation in detecting early pregnancy in the mare. One of my ablest, most earnest supporters was the Editor of *THE VETERINARIAN*. We differed as to the mode of auscultation, but we cordially agreed as to its importance and value. Since that evening I have applied the stethoscope very successfully in several cases, and can with still greater confidence recommend it to the attention of my veterinary brethren.

I was applied to by the Rev. R. Aubutin, of Chipstead, to examine a mare sent him by his son from Oxfordshire. She was said to have gone to horse, but, as she shewed no appearance of pregnancy, was ridden as usual. The first time I used the stethoscope I could not distinguish any sound indicative of a gravid uterine condition; but on my second examination, a few days afterwards, I distinctly heard the pulsations of the foetal heart. My prognosis proved perfectly correct, and she has a fine colt now living.

I also had the opportunity of examining two mares belonging to Lord Monson. One was a bay mare that had failed two or three years to Mr. Theobald's Laurel. His lordship was very anxious for a foal, she being a very favourite mare, and, therefore, persevered year after year. I was fortunate enough to hear the wished-for indication, and she has now a very promising filly. The other was a pony, with regard to whom my prediction was also verified. In neither of these cases was there any pendulous condition of the abdomen, or a single external symptom to guide the examination, or lead any one to suspect that the mares were with foal.

Let it, however, be remembered, that it is not the absolute use of the stethoscope I advocate, but *auscultation*, whether direct or indirect; being convinced there are many who will apply the naked ear with more advantage and success to the abdomen than the stethoscope, particularly those who are not accustomed to its use.

With regard to the possible danger of making these examinations, it is true that caution should be observed, as, indeed, it must in all operations and observations; but, an assistant having the fore foot in his hand, he can always give the examiner sufficient time to get away, provided the mare should be restless or wilful. The twitch may also be used, though I much object to it, if by any means it can be avoided, as it produces a general disturbance in the circulation. Percussion is most important, not only as an adjuvant to enable us to discover the precise situation of the uterine tumour, but it likewise prepares the mare for the application of the stethoscope, by removing the surprise which its immediate use will sometimes occasion. Of course, every care must be taken to avoid all source of noise that may in any way interrupt us in our exploration, or cause us to confound the intestinal movements, &c. with the sound of which we are in search.

I must still trespass on the attention of the readers of *THE VETERINARIAN* while I detail a point of practice which I have had recourse to in parturient mares, and with most decided effect: it is that of bloodletting, when the mare has been completely exhausted by her ineffectual attempts to expel the foetus, owing to the extreme rigidity and unyielding condition of the uterus and external parts. Fortunately, from the beneficence displayed by nature throughout the period and process of utero-gestation, our duties in these cases are few and simple; but instances will sometimes occur where the practitioner is called upon to exert all his skill and energy on the appearance of alarming symptoms, and much tact is necessary to discriminate the proper time and the assistance required. The loss of blood in these cases tends to advance the labour, by producing relaxation about the uterus and vagina.

The quantity of blood to be taken away must, of course, be regu-

lated by the condition of the mare, the state of the pulse, and the appearance of the blood. I have never practised it without finding in a short time, particularly where there has been an overloaded state of the system, the pains return, and the uterus recover its action; while in due time the efforts of nature are accomplished, the foal delivered, and the mare does well.

I cannot but think that every one interested in the prosecution of physiological knowledge must hail with great satisfaction the experiments recently made and recorded by my friend Mr. James Turner on the blood. The manner in which these have been conducted must strike the inquiring mind with great satisfaction; and justice must add her tribute of praise to the novel and able method of carrying out a reasoning that probably, in some respects, may revolutionize the doctrines laid down for us by a few of the early members of the medical profession.

## INFLAMMATION OF THE JUGULAR VEIN, DISEASED LUNGS, AND DEATH.

*By Mr. W. A. CARTWRIGHT, Whitchurch.*

### CASE I.

ON the 9th Sept. 1825, I was sent for to see a cow, fourteen years old, belonging to Mr. Grosvenor, that had, on the near side, an inflamed jugular vein. She had been bled three or four weeks before, and the vein began to swell and ooze out a few days afterwards. It has become gradually worse and worse up to the present period, and divers means have been fruitlessly tried by the owner and others to effect a cure. The vein is very much enlarged from the orifice upwards, and so are the branches above. The case is the same below the orifice, so far as it can be felt down to the chest. The adjacent parts are also much swollen. The appetite tolerably good—the pulse rather quick. Between her fore legs and about her breast is an œdematous enlargement, so much so that she can scarcely walk. Blister the whole neck in the course of the vein, and give Cape aloes ʒss. and hyd. submur. et pulv. digital. āā ʒj.

12th.—The cautery was applied to the orifice; and there were given, resin ʒj, digitalis ʒj, zingib. ʒij; and spirits of turpentine rubbed on the œdema.

16th.—The kidneys acting well, and the œdema beginning to subside. Repeat medicine and embrocation.

19th.—Better.

21st.—Eats pretty well, and is now turned out to grass. Wound not closed. Inject solution of hyd. oxymur., and repeat medicine.



26th.—The effects of the blister having subsided, and the vein being very hard, another vesicatory was put on.

Oct. 4th.—A tumour has been forming since the last date, and is getting large near to the sternum. Insert two setons in it, and one in the neck near to the orifice of the vein.

6th.—A good deal of thick pus flows from the opening, and the setons discharge well; but the tumour is not diminished.

17th.—The discharge has ceased from the orifice, which is closing fast. The vein is hard above the orifice, but is softer below, and so much pain is not evinced on its being pressed.

24th.—The cow is becoming a great deal thinner, and has not fed so well lately:—the weather is cold, and appears to injure her. Put her up every night, and give her some hay. The wound is healed, but the respiration is accelerated. Pulse 80.

27th.—Respiration and pulse much increased. She coughs a great deal, and her lungs appear to be diseased. She was ordered to be destroyed.

*Dissection.*—The whole of the vein felt like a thick rope before it was dissected from its situation. It had assumed the appearance of ligament. Its united coats, where pus was contained in them, were fully one-fourth of an inch thick, and its whole diameter one inch and a quarter. For about four or five inches from where it bifurcates towards the breast, it was quite solid, and obliterated. Its branches above were also closed, but with lymph only. From the lower part that was obliterated—where it was solid—for about four inches downwards, it would admit the introduction of a finger, and was filled with putrid matter. From the last mentioned part, for four or five inches more, a probe could with difficulty be introduced; and below that it would again admit the finger. Where it entered the chest, each side of it was enlarged to about the size of a walnut; one side had nearly ulcerated through its coats, and the other appeared to have done so, and was again uniting. It was quite as badly diseased for many inches into the chest, but I did not ascertain whether this continued quite to the heart; yet it contained matter of the same nature as that already described. The internal coat of the vein, where pus was found, was of a yellow colour. The vein was ulcerated through in the inside of the chest, and the pus was making its way through on the side of the sternum, and between the ribs on the near side and parts of the bones were bare, loose, and exfoliating, with much pus about them. The tumour near the sternum, which could be felt on the outside, contained a quantity of pus, but it lay deep.

The LUNGS were very white—perhaps, in some degree, from the animal having been stuck—and abscesses existed in many places. There were, also, many vesicles on the lungs, of various sizes, and some contained at least 3ss. of clear serum, and appeared to be

formed from the pleura;—others were more deeply seated, and seemed to be situated in the cellular membrane. They were quite white and full. The whole of the lungs felt much knotted. There was no thickening or ulceration, or any disease in the opposite side of the vein where it was punctured, nor did it appear to have been touched with the fleam.

## CASE II.

On the 2d of September, 1838, a grey cart mare was sent to me with an inflamed jugular vein on the near side. She had been bled by a blacksmith three weeks before, and once since by the owner, on account of supposed colic, and had been turned out soon afterwards. The day before I saw her she had bled from the upper orifice about a quart. The two openings are about two inches from each other, and bloody matter oozes from them. For about three or four inches all around there is great thickening and swelling of the integument, and the swelling of the vein is as great below as above. The man says, that during last night she has swelled a good deal up the neck towards the ear. She was out in a good pasture of clover. She has been out most of the time, and occasionally worked; but is much worse on being worked. I injected a solution of hyd. oxymur., and found the openings communicated. I ordered her to be kept up, and to have a mash now and then.

*5th.*—Better. Not much swelling around, but the vein feels very thick. Inject a solution of sulphate of zinc, and put a tent of it in each wound.

*9th.*—Better: there is little discharge, and the openings are nearly closed. Inject and put tents in, moistened with a strong solution of hyd. oxymur. There has been no œdematous swelling towards the head since she has been kept up.

*16th.*—She has been neglected, and not brought to me; and has evidently been rubbing her neck against something, as it is more inflamed and tender. Granulations are springing up from the orifices, and there is a little unhealthy matter from each. I gave a dose of physic, and injected the sinus with sol. zinci sulph., and put a tent dipped in a solution of hyd. oxymur in at the lower orifice. I blistered the neck, and ordered her to be more carefully tied up.

*20th.*—Less swelling. The lower orifice is large. I now introduced a hooked piece of wire into the wounds, and drew out portions of the vein; in fact, cutting the diseased vein at each end clear across. I then put a tent of ung. hyd. oxymur. in each.

*23d.*—Dressed the wounds as before, and blistered again.

*26th.*—The blister has risen well. The openings are not sufficiently large to get any sloughs out; I therefore laid open the

space two inches between the wounds clear through into the vein, and removed a good deal of sloughing matter; and found that the vein was considerably thickened above, but was small in caliber. It was much worse than I thought it was, as I could introduce the whole length of my finger into it, and found it full of matter and sloughs. I introduced a seton, and brought it out at this point, in order to have a discharge below. I dressed the parts with solut. zinci sulph., and ordered a warm bran poultice to the neck, as the vein was considerably thickened up to the angle of the neck. Upon the whole, the case is worse than it has yet been, and I almost fear the result.

29th.—I went over to her, and found that the poultice had not been applied, but that she had been fomented instead. The wound looks very healthy, and there is but little discharge from it, or sloughs in it. It is very much swollen above quite up to the ear, and the vein distended and hard. I merely dressed the wound with lin. tereb., and ordered it to be fomented as before. I fancy that matter will form in the vein higher up.

Oct. 3d.—The wound for two inches, and all below with the seton in it, is going on well; but all above this place is very hard and tender. Where the vein bifurcates it is uncommonly full and hard; but the branch that comes from the ear is not thickened for above an inch or two. The other branch that comes from under the jaw is very distinct, and as large as a thick goose-quill. The mare looks much thinner, and does not feed so well; but she can move her jaws and head pretty well. Her head does not seem affected by the obstruction. An abscess will form somewhere near its bifurcation, and, in order to encourage it, blister it again.

6th.—I think her better. The parts are not so tender, and I think that there is now a sanious discharge at the wound from the superior part of the vein, and that it can be heard gurgling in it above, and can be squeezed out below: the branch under the jaw is not so thick. I ordered some blistering ointment to be rubbed on, and dressed the wound with ung. hyd. oxy. rub.

10th.—I was sent for in haste, and informed that the mare was dying. I went over immediately, and found that such was the case. Yesterday morning she began to get worse, and to swell about the neck and face, and the owner thought proper to take three or four quarts of blood from her. From that time she became rapidly worse, and, when I saw her, the swelling had been very rapidly increasing since my former visit, and even since yesterday. The whole of her lips, face, and cheeks, and down the front of the neck to the breast, and nearly the whole of the near side of the neck, were enormously swollen and œdematous. The part where the blister had been rubbed on the vein felt much softer and flabby, and which I punctured, and liberated a tea-cupfull of unhealthy matter. She



had fallen down several times this morning, and now drew her breath laboriously. I saw that it was all over with her, and that mortification was taking place, and therefore advised that she should be destroyed. She was accordingly led into the stack-yard, where I shot her through the brain, and she died instantly.

*Examination.*—All about the head, face, and neck there was immense effusion (an inch thick) of lymph and serum; but the parts situated in the neighbourhood of the place where the vein was diseased, and below the bifurcation, was a mass of putridity, and only about one-and-a-half inch of the vein could be discovered, and that was situated just immediately above where the original upper puncture had been made, and which was still pervious, but thickened and contracted, and would admit matter to escape from the diseased part above. The vein between the two punctures, and for about four or five inches below where the seton had been, had sloughed away; but the parts did not look very unhealthy. Below where the seton had been, every thing was in a natural state, and continued so to the heart. For about four or five inches above the bifurcation of the vein each branch was plugged up at a valve, with, to all appearance, coagulable lymph, &c. either thrown out by the vessel, or, more probably, as it was not attached to the vein, formed by the coagulation of the blood in the vessel. It evidently terminated at a valve in each branch, and was composed of concentric layers, fairly plugging up the vessels. This lymph occupied only a space of about an inch or an inch and a half. Below that was coagulated dark-coloured blood for an inch or two more; and, still lower, an abscess was formed surrounded by a mass of putridity. The valves were not diseased where the obstruction terminated, and the lymph at these places broke off quite abruptly.

The carotid artery was sound, and not at all affected, although running through a mass of disease nearly a foot in length. The jugular and carotid on the opposite side were in a normal state. The effusion of lymph and serum extended not only externally, but all about the larynx and tongue, and to every part internally, and to the inferior jaw, and in a manner which I never before saw.

*The lungs were sound.* There were, perhaps, ten ounces of serum in the pericardium, and there was effusion of lymph and serum on the surface of the heart at its base, with a few spots of ecchymosis in the interior of it; but, upon the whole, very little more changed than is usually the case in most active diseases. The kidneys, I think, were unusually large, each weighing four pounds, but being sound.

This mare had been very liable to attacks of spasmodic colic of a most violent kind, and appearing suddenly without any assignable cause. She was generally relieved by a severe bleeding, and the administration of an anti-spasmodic drink. It was after a bleeding on account of an attack of this complaint that the present case of

phlebitis occurred, and she had been bled a week before for the same reason. I did not lose the opportunity of endeavouring to discover the cause of this disposition to colic, and I began to trace the whole course of the bowels. In a part of the small intestines I discovered an intussusception of nearly two feet of the small intestine into the contiguous portion. The part within the other was a little thickened; but neither it nor the external portion, nor the mesentery thereto attached, were in the least inflamed or diseased. I could not discover any thing else unusual throughout the whole course of the bowels.

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### ON THE GESTATION OF COWS.

*By the Right Hon. EARL SPENCER, President of the English Agricultural Society.*

[Read May 25, 1839.]

FOR the purpose partly of curiosity, and partly because I thought the notions entertained respecting the ordinary period of the gestation of cows incorrect, I, several years since, began to take notes, whenever a cow calved, of the length of time she had been pregnant; and having now the periods of gestation of 764 cows taken in this way, I think a sufficient number of cases has been collected to enable me to draw general conclusions from the observations which I have made. I certainly am not aware of any practical use to which the knowledge of the results to which I am about to draw the attention of the English Agricultural Society can be applied; but as they are connected with the physiology of cattle, and they differ from statements made in some books of deservedly high authority on agricultural science, I think they may be considered sufficiently interesting to induce the Publication Committee to insert this paper in their Journal.

In order more clearly to bring under the view of the English Agricultural Society the conclusions to which my observations have led me, I shall begin by inserting a table, which will shew how many cows producing live calves have gone each of the different periods therein mentioned. The first column shews the number of days of gestation; the second, the number of cows which have gone each period; the third and fourth columns shew whether the produce was a cow calf or a bull calf; the fifth, if it was twin cow calves; the sixth, if it was twin bull calves; and the seventh, if it was twins of different sexes. For instance, if 279 is taken, it will appear that 32 cows went 279 days; that 16 of them produced cow calves, 11 of them produced bull calves, 3 of them produced twin cow calves, none of them produced twin bull calves, and 2 of them produced twins of different sexes.

TABLE.

Number of Days of Gestation.	Cows.	Cow Calves.	Bull Calves.	Twin Cow Calves.	Twin Bull Calves.	Twin Cow and Bull Calves.
220	1	...	1	...	...	...
226	1	1	...	...	...	...
233	1	...	1	...	...	...
234	1	...	1	...	...	...
235	1	1	...	...	...	...
239	1	1	...	...	...	...
242	1	...	1	...	...	...
245	2	2	...	...	...	...
246	2	...	2	...	...	...
248	1	1	...	...	...	...
250	1	1	...	...	...	...
252	2	...	2	...	...	...
253	1	...	1	...	...	...
254	1	1	...	...	...	...
255	2	...	2	...	...	...
257	2	1	1	...	...	...
258	3	1	2	...	...	...
259	1	...	1	...	...	...
262	1	...	1	...	...	...
263	2	...	2	...	...	...
266	1	...	...	...	1	...
268	2	2	...	...	...	...
269	2	...	1	...	...	1
270	5	2	1	1	...	1
271	6	5	1	...	...	...
272	3	1	1	...	1	...
273	3	2	1	...	...	...
274	5	...	5	...	...	...
275	5	2	2	...	1	...
276	15	7	6	...	1	1
277	14	10	2	1	...	1
278	18	11	4	1	...	2
279	32	16	11	3	...	2
280	35	15	20	...	...	...
281	39	20	18	...	...	1
282	47	26	20	1	...	...
283	54	30	24	...	...	...
284	66	33	33	...	...	...
285	74	29	43	...	...	2
286	60	22	38	...	...	...
287	52	25	27	...	...	...
288	42	13	28	...	1	...
289	45	20	25	...	...	...
290	23	10	13	...	...	...
291	31	9	22	...	...	...
292	16	5	11	...	...	...
293	10	1	9	...	...	...
294	8	1	7	...	...	...
295	7	3	4	...	...	...
296	6	2	4	...	...	...
297	2	1	1	...	...	...
299	1	...	1	...	...	...
304	1	1	...	...	...	...
305	1	1	...	...	...	...
306	3	3	...	...	...	...
307	1	1	...	...	...	...
313	1	1	...	...	...	...
	764	340	395	7	5	11



From the inspection of this table it will be seen that the shortest period of gestation when a live calf was produced was 220 days, and the longest 313 days, but I have not been able to rear any calf produced at an earlier period than 242 days. Any calf produced at an earlier period than 260 days must be considered decidedly premature, and any period of gestation exceeding 300 days must also be considered irregular, but in this latter case the health of the produce is not affected. It will also be seen that 314 cows calved before the 284th day, and 310 calved after the 285th; so that the probable period of gestation ought to be considered 284 or 285 days, and not 270, as stated in the book upon Cattle published under the superintendence of the Society for the Diffusion of Useful Knowledge\*.

It appears, also, that the number of breeding females is less considerably than the number of males, and to the number of males ought generally to be added as animals that will not breed, the females who are twins with males. I have heard and believe, that, in some cases, a cow-calf, twin with a bull, will breed; but in no instance in which I have bred twins of different sexes has the female been a breeding heifer. The number of breeding heifers from these 764 cows was 354; the number of bull-calves 422; and the number of heifers, twin with bulls, usually called freemartins, 11.

There is a prevalent belief among farming men, and, I believe, farmers, that when the time of gestation of a cow is longer than usual, the produce is generally a male calf. I must confess that I did not believe this to be the case, but this table shews that there is some foundation for the opinion. In order fairly to try this, the cows who calved before the 260th day, and those who calved after the 300th, ought to be omitted as being anomalous cases, as well as the cases in which twins were produced; and it will then appear that, from the cows whose period of gestation did not exceed 286 days, the number of cow-calves produced was 233, and the number of bull-calves 234; while from those whose period exceeded 286

\* In another work, however, entitled "British Husbandry," published under the superintendence of the Society for the Diffusion of Useful Knowledge, the experiments of M. Tessier, of Paris, on the gestation of cows, are recorded to have given the following results:—

" 21 calved between the 240th and 270th day, the mean term being 259½			
544 do.	.....	270th ....	299th ..... 282
10 do.	.....	299th ....	321st ..... 303

In most cases, therefore, between nine and ten months may be assumed as the usual period; although, with a bull-calf, she has been generally observed to go about forty-one weeks, and a few days less with a female." Vol. ii, p. 438.—F. BURKE.

days, the number of cow-calves was only 90, while the number of bull-calves was 152.

I am not aware of any other conclusions that may be deduced from the collection of cases which I have made, and, as I have already stated, I do not see in what manner the knowledge of these conclusions can be practically useful; but any information elucidating the physiology of cattle may be advantageous in some way which, at the present moment, I do not foresee. I think it most probable that these results will be found generally applicable; but it must always be recollected that they are derived from the observations of one breeder only, and, though I think it likely that no other man in this country has made similar observations on so large a number of individual cases, still it must be admitted that there is a possibility that, from the circumstance of my experience having been confined to one variety of cattle, and to one farm, there may be found a difference in the results to be deduced from a similar experiment, if it was tried on land of different quality, and upon cattle of some other breed. I will therefore add, that the situation of the farm on which my cattle are bred is the northern part of Nottinghamshire; that the soil on which they are always kept is either a light sandy soil, or peaty meadows; and that they are of the Durham, or improved short-horn breed.

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[This is a most valuable paper. With the exception of the records of M. Tessier, we have no authentic account of the usual period of utero-gestation in most of our domesticated animals, and his table, embracing so large a field, might not satisfy the diligent inquirer with regard to any individual race. It is most desirable to the breeder to be enabled to calculate, as nearly as possible, the period when he may expect the parturition of his cows. Many arrangements about the farm may be connected with this, and, more particularly, arrangements that have regard to the well-doing of the cow, and especially in districts where puerperal fever, or dropping after calving, usually prevails to any considerable extent. In the 764 cases which the noble author of this paper has placed on record, very nearly six-sevenths of them fall within twelve days of each other, and almost one-half within five days. What opportunity does this afford the breeder to avoid, or successfully to meet, many untoward circumstances which his experience tells him he may expect with regard to individual cows, or his breed generally!

We have now lying before us "*Annales de l'Agriculture Française*" for April 1837, in which M. Lefour describes the cattle of the greater part of Germany. He observes that the earliest parturitions are about the 240th day, and the latest about

the 313th day. How closely does this approximate to the account given by Earl Spencer! He adds, that the period of gestation is longer in the larger German cattle than in the smaller breeds. It would be an interesting inquiry whether this were the case with regard to our cows. Who will give us the usual period of utero-gestation in our smaller Scotch and Welsh cattle, compared with our larger breeds on the fertile pasturage of the south?

It would seem that one reason which prompted the noble lord to this inquiry was the error committed by the author of the work on "Cattle," who assigned 270 days as the usual period of pregnancy. He did so. Will the reader, however, who may happen to be in possession of that work, turn to page 527? The author has no sooner assigned the usual period of pregnancy than he refers to one of the latest reports of M. Tessier, in which he had recorded the period of utero-gestation in 1131 cows, as a corroboration of his statement. In these 1131 cows, M. Tessier says that the shortest period of pregnancy was 240 days, and the longest 321. Now what had the author of the work on Cattle done? He had added together the extreme numbers, and he had divided the sum by 2, in order to obtain the average. It was a rude method, but the only one that he could pursue. He had not the valuable table of Earl Spencer. Two hundred and forty added to 321 make 561, and this divided by 2 gives a quotient of 280, or, more accurately, *two hundred and eighty and a half*—he pledges himself as to the accuracy of this statement—and then, in the hurry of writing, or from some unaccountable *etourdissement* of the moment, he sets down 270 instead of 280, and this was not afterwards corrected or observed. It was a shameful piece of carelessness, and he deserves the gentle castigation which he has received from the noble earl, and the harder slap from the author of "another work." He confesses, however, that he is not altogether sorry for it; for it has elicited this "table" from the noble lord, and we have no longer the strangely indefinite period of "between nine and ten months," nor the somewhat too early one of 280 or 281 days; but the interval between that and the 290th day in five cases out of seven, or about the 284th or 285th day—314 Durham cows out of 764 having calved before the 284th day, 310 after the 285th, and no fewer than 140 on those very days.—Y.]

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## CASES OF DEPRAVED APPETITE, FOOT-ROT, AND THE ATTACK OF THE FLY IN SHEEP.

*By Mr. JOSEPH GUTTERIDGE, Ross.*

My dear Sir,—I HASTEN to give you an account of that singular and destructive depravation of appetite in a flock of sheep in my neighbourhood, respecting which you solicited inquiry. They were turned into a field of turnips; but they had not been there more than a few days before the shepherd fancied that some of them were not doing well: they were dull, and lagging behind the others, and altogether indisposed to move. The appetite was gone, and there was considerable heaving of the flanks. He drew twenty-five of the worst of them, and put them by themselves. On the following day three of them were dead. He gave an active purge to the rest, but, in the course of four days, six more of them had died.

I was called in, and, of course, availed myself of the opportunity of examining some of the dead sheep. I found the rumen and abomasum, and nearly the whole of the intestinal canal, loaded with sand and portions of indigested food of various kinds: there was also great inflammation in various parts of the intestinal canal.

I ordered the remainder of the flock to be immediately brought into the fold-yard. Several of them were purging very much. I, however, gave to every one of them a brisk dose of Epsom salts with ginger, and I kept them in the yard all night.

The next morning I found that the salts had taken very good effect. On the third day a second dose was given to each of them, and they were turned into another field. Only one died afterwards. In him I found very little sand, but there was great inflammation of the intestinal canal, and which was the cause of death.

Since my first letter was written, I have had sixty yearlings labouring under a similar disease. I gave to each an active purge of salts with gentian and chamomile, and, afterwards, a dose of stomachic medicine daily for ten days. Their food, while under treatment, consisted only of dry meat, as cut hay and a few oats. I saw the shepherd a few days ago, and he informed me that they were all going on well. I have, within the last fortnight, sent out medicine for more than two hundred sheep having the scour, all of which have done well. It is singular that these cases should happen in the summer season, for, generally speaking, it is in the spring of the year that the scour most prevails.

I have had, this summer, two flocks in which the foot-rot has

been very prevalent, and which I attribute to the unusual wetness of the season. My mode of treatment differs but little from that which you have recommended, except in some minutiae, which, however, I have occasionally found of considerable consequence. I bring them into a dry fold-yard, or barn, wash the feet with soap and water, and then rub them dry. I particularly rub them well between the claws with a soft brush that I have for the purpose, and which is preferable to a cloth. I then remove with a knife every horny excrescence that may be growing between the claws, and conclude with the application of the butyr of antimony. More than half the cure depends upon the thorough paring out of the foot. I am, at this time, attending a two-year-old tup that I was obliged to poultice, and to bleed, and to physic for a long time, but we are conquering the disease.

Sore heads have been very common this summer, especially in woody districts. The sheep strike their heads with their hind feet until a wound is produced, and, if no remedy is applied to this, it soon becomes not only troublesome but dangerous. I usually take equal parts of tar and sulphur, and apply it to the part warm, putting either a thin leathern cap or a little short wool upon the head. This mode of treatment seldom fails, but still I do not quite like it. Will you give me your opinion?

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[Accumulations of sand and gravel have been found in the stomachs of horses and cattle, and have occasionally destroyed these animals. The patients had been pastured in, or had frequent access to, meadows through which very shallow streams of water flowed, and the horse, or the ox, was obliged to put his lips within a little distance of, or close to, the gravelly bottom every time he drank. A small portion of the sand would be drawn up with the water, and find its way into the stomach. There it would gradually accumulate, and produce a great deal of irritation, and sad inflammation would ensue, and destroy the animal.

Mr. Gutteridge's case, however, is a very different one. Some sheep are turned into a field of turnips. They have not been there more than a few days, before the flanks heave, the appetite is gone, and several of them die. On opening the carcasses the rumen, and the abomasum, and the whole intestinal canal, are found loaded with sand.

The irritation caused by the sand through the whole or a certain part of the intestinal canal, was, doubtless, the cause of death; but how came the sand there? The sheep had eaten too plentifully of the turnips. There had been considerable extrication of acid gas, or the development of an acid principle, in the intestinal canal, and the earth they swallowed was taken by them,

from their having experienced its effects in assuaging the pain produced in the stomach and bowels by this acidity. In their common feeding in the meadow they always swallowed a portion of absorbent earth. The want of teeth in the upper jaw rendered it impossible for them fairly to cut through the herbage. It was partly cut, and partly torn up by the roots, and the animal swallowed a considerable quantity of earth. It prevented the evil which would result from the too rapid decomposition of the grassy food. Combining with the decomposing food, it acted as a gentle purgative, and an admirable neutral salt was manufactured in the stomach. Here, however, was the acescent principle in excess—the turnip, and not the grass; and the turnip had either been pulled or was eaten down to a level with the ground, and little or no earth was taken with the food. Then the animal set to work, and devoured it by mouthfuls: the absorbent principle mingled with the developed acid, but the sandy portion of the soil remained—it rapidly increased in quantity, and it acted as a destructive irritant on the membrane of the stomach and intestines.

The mode of treatment adopted by Mr. Gutteridge was that which good sense would suggest—mild but effectual aperients—those of an alkaline character, and either mingled or alternated with tonics.

The lesson to the farmer is sufficiently evident.

As to the prevention of “Sore Heads”—this can only be accomplished by the early application either of coarse whale oil or spirit of tar. “The fly” has a strong dislike to both of these substances, and will keep at a distance from the sheep that is scented with them.

When the sheep has been “struck” by the fly, he cannot use a better application than that to which he has been accustomed to have recourse.—Y.]

## A CASE OF OBSTRUCTION IN THE ŒSOPHAGUS, AND SINGULAR CONGESTION OF BLOOD IN THE LUNG.

*By Mr. T. PARIS, Colyton.*

A FOUR year old mare, the property of Mr. Mills, of this town, was perceived on entering the stable, Aug. 7, 1839, to be choaked from eating some dry bran that had been left in the manger. The gullet was distended from nearly the head to the chest. Several horns of water were given, and pressure applied to the throat with a view of removing the obstruction in detached portions. This not effecting the object, a small probang was introduced; but it was



neither long nor strong enough to overcome the resistance. Recourse was then had to the one usually employed for cattle, and, for greater security, I had our patient cast.

She was thrown on her right side, and the bulbous extremity of the probang introduced. The bran had absorbed a considerable quantity of the mucus secreted by the follicular glands, and had swelled, and become so impacted, as to withstand more than ordinary force. At length, however, it suddenly gave way, and the whole passed freely into the stomach.

On withdrawing the end of the tube from the mouth, but without any force or difficulty, a small quantity of blood gushed from the nostrils, and, the muzzle being in a somewhat elevated position, a portion of it flowed down the windpipe. There was every appearance of her being immediately suffocated. She was freed from the hobbles as quickly as possible, and got upon her legs, when she manifested all those distressing symptoms that usually take place on a small quantity of fluid passing down the trachea.

On recovering a little, she was led to the stable, and made to inhale the steam from bran and boiling water. She gradually rallied, especially after I had taken from her about three quarts of blood; but the characteristic gurgling in these cases was still to be heard at the chest. As soon as I had satisfied myself of her capability of swallowing, I administered six drachms of spirit of nitrous ether, well mixed with linseed oil, and placed a rowel in her chest.

8th.—The pulse is small and quick. The discharge from the nostrils, which was yesterday in great quantity, and of a semi-sanguineous nature, was now altogether suspended. There were, however, symptoms of irritability and general fever about her which I did not like. She was bled to the amount of four quarts; a blister was applied from the throat to the chest, and also on both of her sides. Half doses of sedative medicine were given to her twice in the day.

9th.—The breath is exceedingly offensive, but the discharge from the nostrils is free, and of a better consistence. The pulse continues small and quick, but the respiration is very little accelerated. Neither the rowel nor the blister has acted. Blisters reapplied. Aperient injections. Chloride of lime placed occasionally under the nostrils. Sedatives discontinued.

10th.—The disease is fast assuming a most malignant type. Much enlargement around the lower part of the blisters. Give Mindererus's spirit three times in the day, with gruel, &c. Continue to apply the chloride of lime. She rallied considerably towards the evening.

11th.—There is a great flow of coffee-coloured fluid from the

nostrils. The breathing, which had been tolerably quiet from the commencement, is now very laborious. The extremities are cold, and there is every appearance of approaching death. Small doses of chloride of lime were administered, but she died in the evening.

On opening the chest, a considerable quantity of serous fluid escaped, as it did also from the pericardium, and there was some likewise in the cavity of the chest.

The *right lung* presented a black, disorganized mass. The lining membrane, and even the rings of the bronchial tubes, were partly decomposed. The left lung and its bronchi exhibited very slight traces of disease. This accounted for the comparative steadiness of breathing which had continued until the last day. The bronchial tubes on the right side had, from the position of the mare, received all the blood that flowed into the trachea.

The œsophagean canal was next laid open from the pharynx to the stomach. It was perfect in all its parts, and did not indicate the smallest trace of inflammation either on its cuticular or muscular tunic.

You may suppose that I am not a little annoyed by this fatal termination of the case. Was there any thing wrong in my method of proceeding?

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[Not at all. The removal of the impacted bran was a case of absolute necessity, and, agglutinated together as it was, very considerable force was requisite. That force could be more readily and safely applied when she was cast than during the partial confinement of the head, which could otherwise be effected. The abrasion produced by the probang was probably in the back part of the mouth, where it would be compelled to take a curved direction. It could not have been perceived until the instrument was withdrawn, and ere that was quite effected some blood had passed down the trachea and entered the right bronchi. The mare exhibited symptoms of suffocation; a portion, but not the whole, of the blood was returned, or some lesion of the mucous membrane of the bronchi was effected in the struggle to return it: congestion of the membrane very soon followed, and a mechanical obstacle presented itself to the free return of the blood to the left side of the heart. These congestions are sometimes connected with apparently trifling causes, and the supposed diagnostic symptoms of them are not always present.—Y.]

## A CASE OF SINGULAR DESTRUCTION OF THE LUNGS.

*By Mr. T. DARBY, Louth.*

ON Monday, September the 9th, I was requested by Mr. Wiloughby, innkeeper, of this place, to look at a mare that was ill. On examining her, I found her to be, indeed, extremely ill, yet on inquiring the cause I could get no satisfactory account about her, but the whole of my information was comprised in this, that, about a month previously, the horsekeeper had given her a drench to cure the grease, and she had never recovered from the effect of it.

I had attended this mare at different times, and had found her a well-working strong mare. She had been running in the Lincoln coach for upwards of four years. She had now, however, a pulse upwards of 80, with extreme difficulty of breathing—her mouth open, and occasionally gasping for breath, and she shrunk very much when pressed over the region of the kidneys. I bled her; inserted setons in the chest and sides; gave sedative medicine, and administered injections.

In the evening she was worse—on the Tuesday in a still more hopeless state—and in the afternoon she died with scarcely a struggle.

I opened her on the following morning. The bowels were perfectly healthy; the kidneys were both inflamed, but, with this exception, there was scarcely a trace of disease in the whole of the abdominal cavity. When, however, I cut through the diaphragm, at least two pailfuls of watery milky fluid escaped. I was anxious to see the state of the lungs, but, however strange it may appear, there were no lungs to be found—not a portion—except a mass of foetid matter at the termination of the windpipe. The pericardic sac was much diseased, and the mediastinum adhering to the ribs on the near side. In this state the wretched animal had been at work a few days previously.

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[It is to be wished that Mr. Darby had given a fuller account of this strange lesion. Was it an illustration not only of the extent, but of the rapidity with which infiltration of the lung with purulent matter sometimes takes place? This mare was at work a few days previous to her death. We have three cases on our private record, in which, in horses that had been apparently well four, six, and seven days previous to death, pneumonia supervened, and the animals were lost. In all of them the consistence of the lungs was very much diminished, and the



slightest pressure was sufficient to reduce it to a grey pulp. The air-cells were obliterated—and the cellular tissue interposed between them, and even the bronchial tubes, and the smaller and the larger bloodvessels, both arterial and venous, were in many places dissolved and gone. We regarded these cases as most unusual, but in them the smaller lobes particularly on the right side, were pervious to a little extent. There was a portion still of permeable lung; but here is "no lung to be found—not a portion;" and the thoracic cavity was filled with two pailfuls of watery, milky fluid, and that in an animal, the density of the substance of whose lungs is far greater than in the human being. We ought to have far more numerous and accurate accounts of the post-mortem appearances in our patients. It has been too much neglected where it was most of all needed. No clinical lectures have been devoted to this important branch of pathology; and, in the common routine of our practice, it cannot be attended to so satisfactorily as we could wish.—Y.]

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## MR. TOMBS AND "A VETERINARY SURGEON."

Pershire, Oct. 11, 1839.

Dear Sir,—ON perusing THE VETERINARIAN for this month, I perceive that "A Veterinary Surgeon" has made some observations on my cases of red-water and puerperal fever; in reply to which I shall be brief, as I deprecate the system of anonymous writing.

Respecting the first case, I am thoroughly convinced, from the symptoms and appearances after death, that it was a genuine one of the disease, known by the name of red-water. I think a practitioner, who has "met with very many cases of red-water, and several of congestion of the liver," is capable of discriminating between the two diseases, especially if he has had opportunities of witnessing the post-mortem appearances of the same, which I have, and communicated the "*facts*" of the last case of red-water to you, about which your correspondent has great doubt, although he acknowledges that he has not seen one post-mortem appearance of such a case.

As to the other case, I can give him positive "proof," if proof be wanting, that it was actually a case of puerperal, or what is generally termed milk fever; although I did not give a description of the early symptoms, for the best of all reasons, viz. that I did not see the animal until she was apparently in a dying condition. I will now, however, state for his information, that the brain and

medulla spinalis were examined, and, on reference to my communication, you will see that I stated, "that on splitting the bones of the spine, the sacral and lumbar vertebræ were inflamed, and the theca vertebralis and bloodvessels of the medulla spinalis at this part gorged with blood, but the brain had no morbid appearance."

I hope this statement will be satisfactory to "A Veterinary Surgeon;" and I beg to tell him, that I would rather encounter an honourable foe than a masked enemy, and that, if he has any further remarks to make on my contributions to you, he must disclose his name, otherwise I shall not take the slightest notice of them.

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[We cordially thank Mr. Tombs for these very proper observations on anonymous correspondents. We take our full share of the blame, and submit without a murmur to deserved castigation. The "Veterinary Surgeon" and ourselves had been old acquaintances, and shall ever continue to be friends; but there was no reason, as we have often told him, why he should have withheld his name. Neither Mr. Tombs, nor any other contributor, shall again have reason to complain.—Y.]

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## ON PUERPERAL FEVER IN CATTLE.

*By Mr. J. HAWTHORN, V.S., Kettering.*

THE papers which have been inserted in THE VETERINARIAN at different times on puerperal fever in cows, have thrown considerable light on that disease, and I have no doubt will lead to much improvement in the treatment of it; but could not something more be done to prevent its occurrence? I think if, a week before calving, the cow was kept in the house, and especially in the daytime during summer, and was limited in her quantity of food, which, for the most part, should be hay, the excessive and sudden demand on the secreting power of the udder would be restrained. I should do every thing to check this demand for a few days, by attending to the state of the body, &c.

I am much inclined to think that this commences in and is essentially a disease of the udder. What is one of the earliest symptoms but a stoppage of the secretion of milk, together with a loss of power in the nerves of voluntary motion? In these cases, every thing conspires to increase the functions of the udder. She has had a good calving—the placenta has been quickly ejected—the blood which went to the supply of the fœtus is now directed to the bag. The age is probably such as to ensure, by former calv-

ings, that the secreting powers of the udder have come to their full perfection. The cow has generally been kept quiet, and is in full condition, so that here is every thing that can be brought together in order "to make the udder." This large milk-making gland has all its energies roused to the very utmost, and at length ceases its functions from being overworked.

In order to prevent this, I should recommend the lowering system for a few days before and after calving, and should also advise that the cow should be milked three or four days before calving, and for the same period after calving she should be milked at least three times a-day. I have often seen this practice adopted for the cows that seemed most likely to fall, and, I think, in every instance with success; at least, I never saw it do any harm.

As my object in this short paper is the prevention and not the treatment of the disease, I shall say nothing about the management of the cow that has actually fallen, except that I have found much benefit from stimulating the bag as well as the loins and the spine. I have almost invariably found the degree of danger in these cases to depend on the quantity of milk that is secreted. If the secretion is stopped altogether, it is ten to one that the cow dies; but if the secretion is tolerably plentiful, the danger is slight, at least as long as such secretion continues.

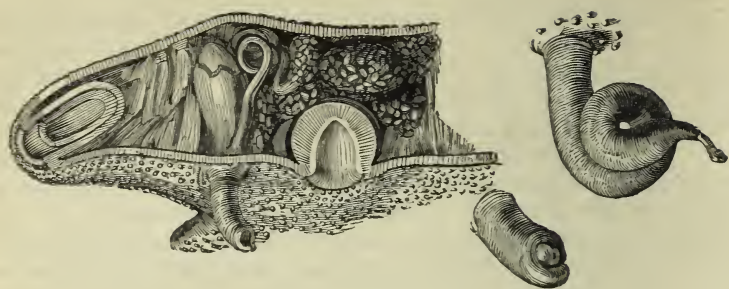
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## ON THE ENTOZOA AFFECTING DOMESTICATED ANIMALS, AND, PARTICULARLY, ON THE FASCIOLA HEPATICA, OR LIVER FLUKE IN SHEEP.

By W. J. T. MORTON, *Esq.*, Lecturer on Veterinary Materia Medica, &c., Royal Veterinary College.

NOT long since, my attention having been directed to the parasites which infest our domesticated animals, I naturally turned to your description of the fluke—the *fasciola* of Linnæus—in your valuable work on "Sheep;" and, although much pleased with your account of it, I could not refrain from observing some discrepancies in your statements with what appeared to me to be the true structure of the parasite as seen under the microscope. Fearing lest my own eyes might have deceived me, I forwarded some of these animals to a mutual friend, Mr. J. de Carle Sowerby, whose talents are above my poor praise, and he has developed that which I could never have hoped to have done. Herewith I send you drawings of his dissections, which I know you will agree with me in considering them to be beautiful.





At the extremity of the head will be perceived an orbicular opening, which I suppose must be designated the mouth of the fluke. This Mr. Sowerby, however, has not been able to trace beyond the representation here given of the animal, nor have I been more successful. It is possible that the parasite possesses the power of projecting this tube-like body, which now is in a state of retraction. In a dried specimen it resembles a small slit. Is this the reason why you designate the mouth as opening laterally instead of vertically? It is certainly a circular opening, inclining somewhat to the inferior surface, both in the recent animal and in those preserved in spirits. Just below this is seen a small projection. In some flukes this is very indistinct, and, at first, induced me to think it marked the difference of the sexes: farther investigation convinced me of my error, for it may be found in all in a greater or less degree of development. Sometimes it is coiled upon itself, and within its opening two minute globular bodies may be seen seemingly attached by filaments. Is this the ova-duct? There can be no doubt of its connexion with the ovaria; and it seems to make up part of the complex genital organs which render the animal hæmaphroditic. The eggs themselves, whether within or without the animal, are interesting microscopic objects. As the latter, they may be obtained in abundance from the liver of a rotten sheep by diluting the bile with water, and then separating them by means of a filter; there can, therefore, be no doubt of the truth of your statement, "that the eggs are frequently received in the food. Having been discharged with the dung, they remain on the grass, or damp spot on which they may fall, retaining their vital principle for an indefinite period of time."

Immediately beyond this prolongation may be observed another opening, called by some the *ventral opening*, but which, in reality, is a sucking disc; and, consequently, some entomologists have given the name of *distoma hepaticum* to the parasite. It is com-

posed of strong muscular fibres, and is imperforate, or, at least, it has no traceable communication with the internal parts of the animal. The question naturally arises, Does this parasite, receiving his aliment by one tube, after having absorbed the nutritious particles from it, return it by the same, as do the polypi, and other animals even still lower in the scale of organization, even the monads?

The singularly constructed eyes of which you speak, I have not been fortunate enough to perceive, nor has Mr. Sowerby, nor some other friends. This shall be the subject of a future inquiry, whenever I am again in possession of the living fluke.

I am sure you will pardon the freedom with which I have written, for I know your love of every thing which advances veterinary science.

Mr. Bracy Clark, when describing the *tricocephalus equi*, asks if the smaller end is the head or the tail. Writers on entomology state it to be the former, and hence the name they have given to this worm. I feel, however, convinced that this is a mistake. Having examined several, I cannot discover the least resemblance to a head at the extreme termination of the tapering portion of the worm; but at its obtuse end a prolongation is perceptible, similar to the head of the *tania*. Whether, like the last named parasite, the *tricocephalus* possesses the power of projecting and again retracting its head, I do not know.

It would be an interesting employment, and not altogether a profitless one, for some of the members of the profession who have made natural history their study, to give us a classification of these parasites. I beg leave to subjoin a table which I have been in the habit of using when referring the student to the medicinal substances which are resorted to in order to get rid of these tormentors. I know that it does not contain all that it ought, nor, perhaps, is it so scientifically arranged as it might be: it may, however, prove a provocative to others to give us something better.

*Parasites infesting Domesticated Animals.*

ENTOZOA.

CESTRUS—*The Bot.*

CESTRUS EQUI	The spotted-winged horse bot	} Found in the stomach
— HÆMORRHOIDALIS	The fundament bot	
— VETERINUS	The red bot	} Found under the skin of the back
— BOVIS	The ox bot	
— OVIS	The sheep bot	Found in the maxillary sinuses.

HYDATIS—*The Hydatid.*

Hydatis cœnurus cerebralis	The many-headed hydatid	Found in the brain
—— cysticercus vel tenui collis	The bladder-tailed or long-necked hydatid	Found on the surface of the intestines, liver, lungs, &c.
—— acephalocystis	The headless hydatid	Found in the substance of these organs, in cavities, and between the muscles.

Fasciola Hepatica—The liver fluke :—Found in the gall-bladder and its ducts.

VERMIS—*Worms.*

Tenia solium	The tape worm	The small intestines
—— plicata	The folded tape worm	The cæcum
Ascaris lumbricoides	The round worm	The jejunum and ileum
—— vermicularis	The thread worm	The rectum, arteries, tumours, &c.
—— vermi-tricocephalus	The hair-headed worm	The cæcum and rectum
Strongylus gigas	The larger strongylus	The kidneys
—— filaria	The smaller strongylus	The bronchi, the eye, &c.

## ECTOZOA.

Acari Scabiei	Mange insect	} The integument.
Pediculi	Lice	
Pulices	Fleas	
Ricini	Ticks	

[No apology was wanting from our friend Mr. Morton for endeavouring to set us right with regard to the anatomy of the fasciola hepatica of the sheep. We have one common object—the discovery of truth. My cuts were copied from “*Leeuwenhoeck’s Micrographia*,” the accuracy of whose delineations has rarely been disputed; and Mr. Powell and myself put this to the test by examining some dead flukes with one of his most powerful lenses. We have one of his best microscopes, and we will again have recourse to it when we can meet with some living flukes. The result probably will be, that there are different species of these parasites. The fluke of the rabbit and the sheep differ materially.—Y.]

## THE FROG PRESSURE FALLACY.

*By Mr. C. CLARK, V.S., Giltspur Street.*

Mr. Editor,—IN resuming the task of exposing College errors, I again disavow all personal motives. To vindicate the truths of physiological science, and enhance the honour of our profession, are objects great and noble in themselves; and when I find false doctrine perverting the first, and bad practice disgracing the latter,



I fear no consequences, and can shew no lenity. As it is a broad question, deeply concerning the welfare of our profession, let us not entertain it on narrow grounds, but with reference to its effects, past, present, and in future, on the horse himself, and also the public whom he serves.

When Professor Coleman assumed the College chair some forty-five years ago, he found the subscribers but just recovering from the mistaken doctrine of his predecessor St. Bel, who had promised the greatest advantages from adopting a concave ground surface with a horseshoe of the ordinary kind.

No such good results had been realized, but in the baneful effects of common shoeing an evil of great magnitude had been long acknowledged to exist, and the public, and intelligent horsemen in particular, expected from the new Institution a speedy and certain relief. Both then, and for long-after, we may perceive in the numerous books published, and plans proposed for the amelioration of the shoeing art, a sort of uneasy sensation of difficulty. The public were alert, but the schemers satisfied none but themselves: there was a feeling of something wanting; in fact, the glorious principle of expansion lay undiscovered and unknown, and without it the subject could not be understood or explained.

At this juncture it was that Mr. Coleman, a speculative and unpractised individual, was placed by fortuitous circumstances in the prominent situation of Professor, a situation irresponsible in matters of doctrine and opinion, and long unchecked by rivalry of any kind. It may in fairness be added, that there was at first no light shining before him; no one had then succeeded in explaining the mysterious evil of the iron shoe; and even his temporary colleague, Mr. Moorcroft, in a work replete with good sense, had only evidenced how little was known by the most accomplished veterinary surgeon of his day.

Thus, the newly elected Professor was left to his own imaginings, and extremely unfortunate they proved to be. We doubt not that he consulted authorities, read Osmer, and Bracken, and Gibson, and cut up the foot, as his book plainly shews, without deriving much benefit. It was on an unlucky day that he lighted on the works of Lafosse, and, captivated by the Frenchman, thenceforth adopted his frog-pressure system with threefold violence. This author had some years before most strenuously recommended a thin-heeled shoe to bring pressure on the frog, and the plan had made considerable noise in Paris; but, finding their horses lamed and strained by the practice, the French, and even, I believe, the proposer himself, very wisely abandoned it as untenable.

It was a cast-off French fashion, seized upon by our British Professor, and, like many a transplanted heresy in science, was

made to flourish with more strength here than in its native soil. Henceforward all the burden of the Professor's song, in print, in patents, in lectures, and in colloquy, was, *frog pressure, pressure on the frog, frog pressure*. Though coming to the College avowedly "to learn and not to teach," scarcely a year had elapsed ere his dogma was established and the edict gone forth, that *primary* frog pressure was the invaluable *panacea* for all the evils of shoeing.

At first, Mr. C. began by recommending Lafosse's shoe, three times as thick at the toe as at the heel, to be used on the fore feet of all horses. It is true that some of his past admirers did affirm the idea to have been conceived by the Professor, *per se*; that he was no copyist, but an original discoverer: however this may be, he quickly surpassed the French master in frog-squeezing propensities; for, not content with the thin-heeled shoe, which brought the pasterns down and bumped frogs enough in all conscience, he contrived a patent artificial frog to maintain constant pressure in the stable, and published a pamphlet in illustration of its imputed merits. But this was not all: at various times afterwards he produced and obtained patents for several different iron devices, having for their primary object a most outrageous and unnatural degree of pressure on this flexible and yielding organ. With specious language and phrases did he propound to each new batch of inexperienced pupils his fallacious theory, that pressure on the frog was the true means of preventing contraction, and the proper object of good shoeing. To doubt or deny this dogma would have been, in their cases, to hazard rejection; and thus he proceeded without fear of contradiction or challenge. No system ever had better auspices or a fairer trial than this. But, unconvinced by its failure even in the forges to which he sold the privilege of using the patent apparatus, and uncorrected by adequate censure, time passed on in continued error, and found him, at the end of thirty years, as inveterate a frog-squeezer as ever.

Thus he annually has confused the subject in a number of tedious lectures on the horny, and (as he has called it) the *fatty* frog; labouring to prove that, being a prominent part, it is destined by nature to act as a wedge to prevent the horses slipping, and that, by its *upward* pressure, it should expand the posterior parts of the foot.

Was there ever such perverted physiology? The horny frog is an elastic yielding body, receding within the hoof, and unfitted for receiving primary pressure, being formed of a series of small arches evidently designed and constructed to avert the too violent effects of accidental encounter with the ground; but it is most admirably adapted for its real purpose, that of permitting the moderate expansion of the wall of the hoof, and restraining its undue action.

Though bold and prominent to the eye, its structure is thin and deceitful; and, as to the sensitive (or *fatty*) frog, its formation is truly of constricted layers of elastic ligament, well calculated to receive pressure from above, but not to communicate it from below. In short, the foot expands from superincumbent pressure, while the real office of the frog is to permit, yet restrain, this action.

Now let me inquire, Can you, by using force upon a soft body, dilate and expand a harder one? Would you use a wedge of dough (or *fatty matter*) to cleave a block of wood? But, observed the ingenious and subtle lecturer, "it should be known" that soft bodies, when confined, resist with the same force as hard ones.

"If," said he, "*if* the objectors were aware of this law of nature, they would then comprehend how the frog, when pressed between the ground, the shoe, and the superincumbent weight, performs the functions which I ascribe to it." Now, Sir, we are aware, of course, that fluids, when *hermetically sealed*, may resist in such a manner; but the material flaw in his argument is this, that the frog is by no means in a similar situation; on the contrary, Nature has so liberally provided it with deep clefts and commissures, and a structure so guarded against compression, that it can relieve itself on all sides: and such are its powers in this respect, that even the Professor's squeezing shoes may for a short time be borne.

Such learned sophisms may do well enough to astonish tyros; and it is in this manner he has proceeded, by the help of misplaced analogy and perverted reasoning, through repeated discourses, bewildering a subject which might be clearly explained in a single lecture. Frequently, also, his hearers have been favoured with an unhappy substitution of cause for effect, and *vice versâ*. Thus "animals with light heads and necks, thin shoulders, and low action" (viz. our high-bred horses) "have their frogs high placed and small; *ergo*, their contraction and their sufferings depend upon the want of *pressure on the frog*."

On the contrary, "those with heavy fore quarters and high action (i. e. our coarse-bred trotters) "have their frogs low and large; *ergo*, their action and circular feet are consequent on receiving *more pressure on the frog*."

Now what is all this but a difference in breeds, in the kind of labour and treatment they undergo, and, above all, in their different susceptibility to the fettering and ruinous effects of the common-nailed shoe?

But the true expansive action of the foot had ever been, as it were, a sealed book to the Professor. "*Cause pressure*," he cried (overlooking this principle and the operation of four fixed nails on each side,) "and the frog will be forced upward, distend the



cartilages, and preserve the foot." So that the gentle and necessary expansion of the horny wall itself, caused by pressure from above in action, he has always refused to see or to recognize, but insisted on pressure from beneath as the primary object in shoeing.

I spoke of fallacies, and inversions of the truth. Here is a case in which he has actually turned the physiology of a most important organ, as it were, upside down. The direct converse of his doctrine is correct.

Respecting the all-important principle alluded to, which he so long neglected and withstood, it is now admitted among the intelligent in our profession at home and abroad, and is leading to a time when *primary frog pressure* will be laughed at or forgotten. In physiological inductions every one is liable to err; but is it not culpable for a public teacher to persevere during half a century in a theory which is every way proved to be erroneous? It is a most serious consideration, that every ardent aspirant in veterinary study in that period has been subjected to false impressions which have, more or less, retarded his success, and depreciated the profession; since, after all they have heard about frog-squeezing at school, it is found untenable in practice, and committed, with the patent shoes, to oblivion.

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## ON THE TIME OF ATTENDANCE AT THE VETERINARY COLLEGE REQUIRED FROM THE MEDICAL STUDENT.

*By Mr. JOHN JACKSON.*

I AM happy to see, from your last Journal, that there are some of the profession who feel anxious for the advancement of the respectability and the extension of the education of the veterinary pupil.

I think it is a praiseworthy undertaking of the gentlemen whose letters appeared in the last *VETERINARIAN*; but, perhaps, Mr. Mayer, after saying that "indentures from every student of his having spent three years in the pursuit of veterinary knowledge be required at his examination," should have added, "unless he shall have studied for the medical profession."

If what Mr. M. suggests were adopted, I think it would be a great injustice to a person who had studied the one profession to be compelled to devote so long a term of years to the attainment of that which is so nearly allied.

The physiology of the one is nearly applicable to the other; the

general principles and practice of medicine are similar. He has been taught chemistry, pharmacy, and materia medica; and, after remaining at the College the requisite time, and undergoing a satisfactory examination, he is still required to produce a certificate of having spent three years in the pursuit of his knowledge! This is rather too much; and I think the profession will join me in saying, that if it becomes a law, there will be a many who have studied the sister science, and who would become veterinarians, but who are prevented from doing so by a too rigorous and ruinous demand.

If it is said that young men will be enabled to obtain their diploma with too superficial attainments, let this be remedied by a more rigorous examination.

I shall feel obliged by your insertion of this in your next number of *THE VETERINARIAN*.

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## THE EFFICACY OF IODINE IN THE REMOVAL OF ABNORMAL GROWTHS.—THE PRESENT AND FUTURE STATE OF THE VETERINARY PROFESSION.

*By Mr. THOMAS HOLFORD, V.S., Northwich.*

HAVING been unable to accept of your kind invitation, I have deferred writing to you until I could communicate the result of some experiments which I have been making on the power of the iodine and mercurial ointments in the dispersion of morbid growths. The ointment on which I place most dependence is composed of three proportions of the iodine ointment to one of the strong mercurial.

### CASE I.

The first subject was a two-year-old filly, that had two splents on her fore legs. She had been repeatedly blistered, but without any good effect. On April 20, I commenced the application of the compound iodine ointment, and, on the 10th of May, the splents had diminished to about half their original size. The time for grass having now arrived, the owner determined that a severe blister should be applied; saying that he was assured that it would effect a complete cure. She was blistered, and sent about eight miles away to grass.

About a month ago I saw the owner, and he told me that the splents remained in precisely the same state in which they were

when the iodine ointment ceased to be applied, and that, on taking her from grass, he meant to give another trial to the iodine. The result of this I will communicate to you at a future period.

### CASE II.

A bay mare, the property of Major Townshend, remarkably vicious, and almost unmanageable, had had for a considerable time a large abscess in the muscles of the thigh, and which, on healing, had left a considerable thickening of the surrounding parts. Blisters and other stimulants were tried without effect. I recommended a trial of the iodine and mercurial ointment, and which totally removed the blemish in the course of a fortnight, to the utter astonishment of the owner.

### CASE III.

A colt, of the blood kind, belonging to E. Corbet, Esq., had, on one knee, a bursal enlargement, which the owner had had repeatedly blistered, and which he was beginning to despair of ever removing. He, one day, casually mentioned the circumstance to me. I advised him to try this ointment. In a few days he requested me to send him a pot of it. He has since informed me that the tumour has entirely disappeared.

I am now using it for spavins and other ossific deposits, and will tell you the result at a future and not far distant period.

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I cannot permit this opportunity to pass without acknowledging the sincere pleasure with which I contemplate the growing prosperity of the Veterinary Medical Society, and the harmony and goodwill that exists among its working members. In fact, every man seems to be putting his shoulder to the wheel; and, so long as this is the case, the machine must progress. I would that I resided in your happy neighbourhood, if it were only to be enabled to mingle occasionally among you.

Every lover of his profession must also hail with delight the prospect of future and rapidly increasing improvement which now offers itself at the Royal Veterinary College. There are, however, some circumstances which demand immediate and most anxious and determined consideration:—I refer particularly to the decreased fees required from the pupil. The honour of the profession is deeply involved in this, and likewise the growing usefulness of the school, whose reputation and usefulness we all have deeply at heart. If there are not the “*sinews of improvement*,” this noble institution will not only be arrested in its onward march, but will soon begin to retrograde even below its former state of insufficiency.



It also appears to me, and to many others, that gross injustice will, on the present plan, be done to the articulated pupil, when the man who knows nothing of our profession, and whose admission to our College will now be rendered so inconsiderately and disgracefully cheap, is placed on an equal footing with him. Several of our brethren have nobly come forward and expressed, in your valuable Journal, their opinion on this and other important points; and all who have the respectability of the profession at heart should, at this crisis, promptly and unequivocally declare their deep and honest feeling on these and other points.

All who are interested in this subject must have read with great pleasure the three letters in your last number, particularly that portion of Mr. Mayer's which refers to a memorial being presented by the profession to the Governors on these most important points. If a meeting were to be called by the veterinary surgeons of the metropolis, soliciting the assistance and support of the profession at large, there is no doubt that the object might be carried into effect, especially if the memorial were headed by the Professors; and I think these gentlemen would cheerfully, eagerly, consent to support and to forward it. It wants but some decisive step, some energetic measure, like this, and the glory of our profession would commence at railway speed.

After we had thus secured the proper education of the pupil, and which cannot be accomplished on the plan which seems at present intended to be adopted—the diseases of cattle and sheep—how is it possible that, with the present distribution of lectures, they can be with the least degree of efficiency taught?—after, I say, we have secured the proper education of the pupil, we might be enabled to take that step on which the stability of the whole depends: we might, with the assistance of the agricultural societies, and particularly of the English Agricultural Society, obtain a legislative enactment, permitting no one to practise except licensed by a board of efficient examiners selected from the established schools.

If I have expressed myself somewhat warmly, I know to whom I am writing, and that every reader of *THE VETERINARIAN* is equally interested in the cause which I am advocating.

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## ON THE NECESSITY OF INSTRUCTION IN CATTLE PATHOLOGY.

*By Mr. SAMUEL BROWN, Melton Mowbray.*

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"It is a principal point of duty to assist another most, when he stands most in need of assistance."

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My dear Sir,—IT appears that the dairymen in London are in the habit of acting upon the principle of the half-loaf being better than no bread. But it is a question worthy of consideration, whether this circumstance may not be more attributed to a want of confidence in the skill of the veterinarian, than a desire on the part of the owners of cattle to sacrifice their property. The former of these positions may be regarded as approximating to the truth; because those persons who keep cattle are actuated by interested yet very proper motives in calling in the aid of veterinarians, and are much more anxious to have the lives of valuable animals saved and their usefulness restored, than to condemn them to be slaughtered under disadvantageous circumstances, when labouring under a disease which might often be cured if skilfully treated.

But when we consider the claims of humanity, and the wants and wishes of the agriculturist, and how much unnecessary pain might be averted and property benefited by our skill, or the one increased and the other ruined by our ignorance, and also that the amount of our employment mainly depends upon our success in practice, is it not of paramount importance that the veterinary student should receive at our national institution an education commensurate with his future wants as a general practitioner? Such being undeniably the case, are the gentlemen who constitute the English Agricultural Society unworthy of our co-operation? They exert a powerful influence, and are fully aware of the serious losses which the graziers sustain, and that these losses may be attributed in a very great measure, to a want of knowledge of the diseases of neat cattle on the part of the veterinarian; and, therefore, aided by that Society, we have now a favourable opportunity of making the Royal Veterinary College what it ought to be.

Can you then, my professional brethren, even as veterinarians, much less as the fathers of sons, some of whom you may intend to bring up to the practice of an honourable and liberal profession, remain passive observers at the present important crisis? Will your supineness not be regarded as tantamount to a tacit acquiescence in the new arrangements at the College? or does it not shew on your part an indolent indifference about that which ought to interest every veterinarian? for, in my humble opinion, there never was a time in which unanimity of sentiment and a decided

but respectful mode of action could be of more service to promote the advancement of veterinary science.

Ought we quietly to submit to have such a task imposed upon a gentleman, whom we must all necessarily respect and esteem, so laborious that no individual, however diversified his talents or deep and extensive his acquirements in pathological knowledge, can possibly perform?

Why the Governors of the College should hesitate to appoint a clinical lecturer in the cattle department I cannot devise; but it would seem that these gentlemen have two obstacles to contend with. One may be, that they imagine there is no member of the profession who has been long accustomed to a successful mode of cattle practice worthy of the important trust that must devolve upon him, and whose integrity could be depended upon not to betray the confidence which must necessarily be reposed on his judgment; or that the funds of the College are too low to admit of a salary being given to a lecturer on the diseases of neat cattle and other domesticated animals.

If the latter should be the case, we may suppose that the appointment does indeed become a matter of expediency, as it would materially tend to assist the present worthy Professors in establishing a cattle practice, and also enable the College to assume its proper character and bearing among the veterinary schools all over the world. If, also, a person may be allowed to form an opinion from the benefits which the country practitioner derives from cattle practice, there can be no valid reason to doubt, that, after a short time, the returns resulting from a similar one at the College would be more than equivalent to defray the additional expenditure which must be incurred.

In the present dearth of knowledge as to the diseases of neat cattle and other domesticated animals, it might be difficult to find a veterinarian *fully competent* to discharge all the important duties of a lecturer; but I am fully persuaded that there would not be much difficulty in meeting with one who has had considerable experience in these branches of veterinary science, and whose practical knowledge would not only enable him both to recognize and successfully treat disease, but also to give clinical instruction; and thus, with requisite assiduity and proper mental energy, he would soon be enabled to arrange, from an accumulation of practical facts, a useful and satisfactory course of pathological lectures. If the appointment of a third professor should be determined on and an inquiry instituted, I imagine that it is possible some liberal-minded member of the profession might be induced to relinquish private practice, and in some measure, even from motives of philanthropy, accept of the highly important but unenviable situation.



# ON THE FUTURE EXISTENCE OF THE BRUTE CREATION.

## PART II.

By Mr. W. F. KARKEEK, V.S., Truro.

[Continued from page 667.]

Oh! who can strive  
To comprehend the vast, the awful truth,  
*Of the eternity that hath gone by,*  
And not recoil from the dismaying sense  
Of human impotence? The life of man  
Is summ'd in birthdays and in sepulchres:  
But the Eternal God had no beginning;  
He hath no end. Time had been with him  
For *everlasting*, ere the dædal world  
Rose from the gulf in loveliness.—Like him  
It knew no source, like him 'twas uncreate.  
What is it, then? The past Eternity!  
We comprehend a *future* without end;  
We feel it possible that even yon sun  
May roll for ever: but we shrink amazed,  
We stand aghast, when we reflect that time  
Knew no commencement.

H. K. WHITE.

WE have attempted, in the former portion of this Essay, to establish the proof of the existence of *mind* in the brute creation. The belief of this is essential to the whole of our argument. "Mind," says Dugald Stewart, "is that which feels, which thinks, and which has the power of beginning motion;" and therefore the proposition, that sensation, thought, and the power of beginning motion, are attributes of mind, is not a fact resting upon experience, but a truth involved in the only notion of mind which we possess. From this it follows that the mind can be subjected to no dissolution, but must be 'celestial and divine,' and will exist after the bodies of the creatures die.

We are not singular in this opinion. Dr. Grew, Dr. Thomas Brown, Dr. Adam Clark, and Dr. S. Clarke, Crousaz—a French writer of some eminence, Sir Matthew Hale, Bonnet, Hartley, Cudworth, Barclay, Warburton, Bishop Butler, Euler, Rev. John Wesley, Leibnitz, Dr. Wardlaw, besides a host of other writers,—men of different schools and professions, and habits of thought,—all concur in the firm assurance, that the self-moving vitality of animals cannot be material or compounded.

Here we might venture to leave this part of our subject; but before we do so, we would say a few words in vindication of man's only real superiority on earth from any presumed depreciation some former remarks may be thought to countenance. We stated that the difference in the reasoning principle of the biped and the

quadruped was only in degree, and not in kind. In the brute it may be compared to a seed in an ungrateful soil. It makes an effort to vegetate, it commences the operation; but circumstances arrest its progress, and render fructification impossible: while the same seed in the mind of man springs to maturity, and bears fruit proportioned to its natural soil, and to the artificial cultivation bestowed upon it.

“ Gradation is the most prevalent principle in the great scheme of creation. The three material kingdoms of nature, however remote their extremes, have points of close contiguity;—bitumen and sulphur form the link between the earth and minerals,—vitriols unite metals with salts,—crystallizations connect salts with stones—amianthi and lylophytes form a kind of tie between stones and plants; the polypus unites plants to insects; the tube-worm seems to lead to shells and reptiles; the water-serpent and the eel form a passage from reptiles to fish; the *anas nigra* is a medium between fishes and birds; the bat and the flying squirrel link birds with quadrupeds; the monkey gives the hand to man; while man, in his turn, seems to be a link connecting a higher order of intelligences\*.” The immaterial world appears in this respect to be very analogous to the material. “ The human subject lowest in intellectual cultivation, if we regard him for a moment as he really is, abstracted from his capacity of improvement, which, in fact, alone forms his real superiority, is very little above the highest intellectual quadruped. We may thus trace intellect, however restricted in development, as it passes, diminishing in degree through the whole of the encephalous animals. These fall into that division of the animal kingdom in which the medullary substance, no longer concentrated, is divided into portions, or spread throughout the system; and in such the co-existence of intellect with mere sensation is uncertain, until, at last, it becomes evident, as in the zoophytes, that nothing but sensation is left, and we may well doubt whether even sensation can exist in matter without something like an immaterial connexion. Sensation, indeed, may be considered to be the lowest state of intellect, which seems to quit the creatures of this world in the vegetable zoophytes.

We have adduced these facts in confirmation of our opinion, and likewise to shew the absurdity of an argument that has been repeatedly advanced by those who disbelieve in the future existence of brutes. “ That if we extend our belief so far, we ought to carry it even to the vegetable kingdom, in whom the living principle is clearly distinguished.” We presume we have clearly shewn the difference between the living principle in plants and

\* Herschell's Natural Philosophy.

the thinking principle in animals as to require no further remarks on this head. We cannot have a mind without a nervous system of some sort ; and in none of the tribe of zoophytes, such as sponges, polypi, and medusæ, have any traces of organs bearing the least analogy to a nervous system been discovered, not even in the largest specimens of the last named tribe, some of which are nearly two feet in diameter.

The conclusion to which we arrive on this portion of our subject is this,—that the mind or thinking principle in the brute is as indivisible and indestructible by second causes as the mind of man. A simple substance can neither be divided nor decomposed ; the soul of the animal, therefore, can perish only by annihilation ; and we do not see that the Sacred Scriptures warrant such a conclusion, but rather they expressly and decidedly prove the contrary.

*"I know,"* said the inspired writer, *"that whatsoever God doeth, it shall be for ever; nothing can be put to it, nor any thing taken from it."* Were a minister of the gospel to deliver a sermon on the immortality of the soul, he could not choose a more appropriate text than this, as it clearly shews that God has produced no being that he intends ultimately to destroy, and that he made every thing in reference to eternity. And what better proof can we have of the truth of the latter part of the verse, than the fact, that although hybrids are constantly created, both in the animal and vegetable worlds, by the interference of man, yet it is only to a limited extent that any alteration can be effected. There is no perpetuation of their kind ; the almighty fiat, *"So far shalt thou go, and no farther"*, is here beautifully and strikingly exemplified, since the present race of both animals and plants are exactly the same with the exception of some slight alteration made by climate, soil, and manner of living, as they were 4000 years since.

The Divine Mind knoweth no change: *"That which hath been, is now ; and that which is to be, hath already been ; and God requireth that which is past."* Chance can do nothing : the mighty motion of the earth, the blowing of a summer's breeze, or the unstable sailing of a cloud, each has a will that moves it ; *"and the same universal law which exists now, ruled over our planet when angel harps rolled first their deep notes over our world, as it sprung forth in its young and peerless beauty from the hands of the Deity."*

It is far from our wish to prove a single argument by reference to passages in Holy Writ, and reasoning therefrom ; yet we cannot allow others to do so, and draw conclusions contrary to the truth and real meaning of the text. One of the most preposterous and absurd conclusions that have been arrived at in this manner is,—  
THAT ALL THE INFERIOR ANIMALS WERE CREATED FOR THE



SOLE USE OF MAN\*. "This monstrous faith of many made for one," says Southey†, "seems rather unreasonable.—Made for thy use, tyrant that thou art, and weak as thou art tyrannical!" 'Will the unicorn be willing to serve thee, and abide by thy crib? Canst thou bind him with a band in the furrow, or will he harrow the vallies after thee? Canst thou draw out the leviathan with a hook? will he make a covenant with thee? wilt thou take him for a servant? wilt thou bind him for thy maidens?' Made for thy use, indeed, when so many seem to have been made for thy punishment and humiliation!"

It really does appear almost unnecessary to refute such an assumption, that every animal but man was created principally for the use of man; yet so firmly do many persons believe this, that if they see an animal which, in their philosophy, appears useless, they wonder why it was created; and the supporters of this doctrine pretend to nothing more or less than that God told them so. This attempt to impugn our holy writings, because they do not understand them, and all to charge them with their own iniquity, is impious: and thus every atrocious torturer of the dumb creation, in the shape of an experimenting vivisector or brutal driver, indulges in his malignity, and then pleads that they were created for their will and for their pleasure. "The charter given to man," says Dr. Drummond, "invests him with the privilege to reign—not with authority to tyrannize; such a charter as a wise and powerful monarch would give to his vicegerent to govern with righteousness and mercy; and, though amply empowered to conquer and subdue, and to tame, he has no privilege from heaven to go forth, like a demon of destruction, wantonly and unsparingly to slaughter and destroy. The indulgence to *use* is not to be misinterpreted into a liberty to abuse the gifts of Providence. We may pluck the fruit, but not hew down the tree. We may urge the courser, but we may not strain his sinews until they snap asunder. *Man's powers have their limits, and animals have their rights.*"

Let any man of sense, after reading the 104th Psalm, that beautiful and sublime descant on the creation, ask of his own understanding, on what principle can it be believed that the all-wise Creator formed such an infinite variety of creatures only to furnish subjects to gratify the cruel and destructive propensities of man? The following anecdote is very apposite to this subject: "How thankful we ought to be to a bounteous Providence, who has created all things for us richly to enjoy," said a reverend divine, at the last great city dinner, whilst sumptuously regaling upon crimped cod and oyster sauce. "The beasts of the earth, the fowls of the air, and the fishes of the sea, were all created for the use of man."

\* See Genesis, chap. i, verses 25, 26, 27, 28. † See The Doctor, vol. iv.

"Indeed!" replied his friend; "but if you had witnessed the hair-breadth escape which I experienced of being devoured by a shark, in the West Indies, you would have been satisfied that the horrible monster entertained just the opposite opinion. He believed that man was created for him\*."

"But how many myriads of creatures exist that are not, and do not, appear to have ever been intended to be subservient to man's use, except as constituting a part of the universal plan of which man himself is a part? Though he is said to be omnivorous, and insatiable in his eating propensities, there are many creatures which, happily for them, he cannot use as food, or render palatable by the condiments and appliances of luxury. Some are protected from his voracious jaws by their loathsome smell; some by their toughness, that will yield to no mastication; and others by their poisonous qualities. The medusæ are too liquid, and the star-fish too earthy, to provoke his appetite. He does not feast on the toad, nor prepare ragouts of the slow-worm, nor luxuriously gorge on a fricassee of scorpions. What generations of the insect, the molluscous and crustaceous tribes, and of higher orders of animals too, of birds, beasts, fish, live and propagate their kinds, and die to give place to new generations, age after age, uninjured and unknown by man!—some in the profound depths of the sea, which plummet never fathomed; some on rocks and islands of the ocean, where sail was never spread; some in the lonely savannah, or howling wilderness of sand, where the foot of traveller never trod. The lion and the tiger have sometimes as good reason to say that man was made for them as they for him; and the raven and the vulture, hovering over a field of battle, have still more reason for making a similar affirmation. The locusts lead forth their armies to desolate the earth and devour the fruits of man's industry, as if he had toiled only to glut their rapacity, and having before them a land blooming like the 'Garden of God,' leave it behind them turned to a desert, exhaling stench and rottenness. The polypi construct their coral bowers in the recesses of the deep, without asking permission of the biped who plumes himself as lord of the creation; and when the war-ship is shivered to atoms on *their* rocky citadel, they may boast how low they can level the arrogance of those who came forth in the pride of their strength, chanting, 'Britannia rules the Waves.'"

No idea can be more erroneous, than that all animals were created for the sole purpose of being subservient to the uses of man; and in nothing are his arrogance and self-conceit so obnoxious as in upholding such a belief, though maintained by philosophers and sanctioned by divines.

\* Rights of Animals, by Dr. Drummond.

They were formed for their own enjoyment or life, and from a principle of benevolence in the Deity. Some creatures, indeed, as the horse and the dog, the rein-deer of Lapland, and the camel of Arabia, are admirably adapted to be the friends and companions of man ; and we acknowledge with gratitude, too, that among the higher classes of animals there is a certain number of living species that are indispensable to the supply of human food and raiment ; but their numbers bear an extremely small proportion to the total amount of existing species. Could it, however, be possibly believed, that all existing species of animals were created for the uses of man, how could such an inference be drawn with respect to those numerous beings which the science of geology have shewn to have existed long before our race appeared upon the earth. For we believe that it is now generally admitted by all competent persons, that the formation even of those strata which are nearest to the surface of the earth must have occupied vast periods—probably millions of years—in arriving at their present state. We find in them the records of various and extensive revolutions in the condition of land and ocean, but no traces of man or his works have hitherto been discovered in them, and none of the fossil plants or animals that have been found imbedded there appear referrible to species now in being : so that the extensive forests and wild savannahs of the globe at that distant period must have swarmed with living creatures, although no human eye was there to behold them.

How can this fact be reconciled with the assertion, that all the animal creation were created for the use of man. With few exceptions, they are created now by their beneficent Author for the same reasons that they were created then. It would be a waste of time to pursue this argument farther: but we will consider these geological phenomena at greater length, for it is a subject connected with *life that has been, and life that is to be*.

We are all aware how true and striking a picture of life and ancient times is handed down to us in the excavated ruins of Pompeii, where a whole city was surprised by the devastating catastrophe of a volcanic eruption, and reduced to skeletons—remaining, as it were, spell-bound by a mighty wizard's wand in the position of active life. So here, in the strata of the earth, we find the annals of an earlier world—genera of creatures imbedded in fossil vegetation, and surrounded by wondrous monsters, dragons of the deep,

“ Resembling somewhat the wild habitants  
Of the deep woods of earth, the hugest which  
Roar mightily in the forest, but tenfold  
In magnitude and terror.”



Let us, for a moment, view the scenes in which these monsters lived\*. “A higher temperature, and swarming with life in its various modifications and elements; its shores were covered with waterfowl, its waters filled with the mollusca and the insect tribes. It was diversified by hill and dale, fountain and fresh shade, whilst the hollow roaring cataracts from the hills, and the mountain torrents from the rocks, and the countless streams from the forests, became tributaries to the rivers. Colossal palms and *yuccas* constituted its groves; and forests, and ferns, and grasses the delicate clothing of its soil. Whilst through the air flitted the monster bat, in immense shoals, darkening the sky in their flight, and winging their way in dense masses across the pathless solitude.” And amid this scene, which the voice of the earth has declared to be true, the *iguanodon* raises his stately form, with a head surmounted by an elliptical horn, a body encompassed in a case of armour, and feet of uncommon length, terminated by gigantic claws. What must have been its power? Its expansive jaws, its colossal frame, secure within the panoply of its cuirass—its sharply pointed teeth,—its paw, carrying death to every weaker animal—its tail, more than seventy feet in length, and whose very movement would demolish a crocodile. Likewise the *gigantic dinotherium*, a lacustrine herbivorous quadruped, eighteen feet in length, and of a proportionate bulk and height. The *megatherium*, or fossil sloth, whose bulky size may be inferred by a tail six feet in circumference, and, like the rhinoceros, armed with a coat of mail, and extracting with a single delve of his talons the roots of gigantic trees. The *mastodon*, allied to the elephant; the *plesiosaurus*, with a lizard’s head and the teeth of a crocodile, having a neck of enormous length, like the body of a serpent, and with the trunk and tail of a quadruped. The *megalosaurus*, or great lizard; the *palæotherium*, resembling a pig or tapir, but of immense size; and the *hylæosaurus*, or forest lizard: these are among the countless inhabitants of the infant world.

Some of my readers may wonder what these fossil remains have to do with our subject,—“the future existence of the brute creation.” We answer, much; for is not the thought overwhelming, that these monstrous shapes, that one time walked the earth, should have been created but to die.

“They roamed, they fed, they slept, they died, and left  
Race after race, to roam, feed, sleep, then die,  
And leave their like through endless generations.”

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\* “Wonders of the World, edited by Henry Ince, M.A.” We would refer our readers to this excellent publication for a more detailed history of these fossil remains.

That creatures such as these, constructed with the utmost care and the most perfect design by the omnipotent hand that formed them, were only created to perish, and to have no future existence!

What could be the use of all this elaborate design without an ulterior object? Can it be possible that the Intelligent Creator formed such a world, peopled it with inhabitants furnished with instincts necessary to their existence, simply for the purpose of devouring each other. You, surely, cannot believe that a Creator evidently as benevolent as he is wise, would have done this without a reference to a future state. We tremble while we write; but we cannot believe that so many myriads of animated creatures, fulfilling the utmost purpose of their span of being in the young world, as surely and truly as the sun in his career accomplishes the glorious end of his, only existed but to shew that life had been, but is no longer—any more than we can believe the cold and heartless philosophy which teaches that death is the end of our existence.

The more that we discover of creation, the more conspicuously does uniformity of design appear to pervade its every department. Each animal has its proper place, and its proper locality; “from the whale in the ocean to the chamois on the mountain rock.” Each is the foremost of material beings in its own proper place; and, while none of them are the servants of any other race, we cannot say that any of them are the servants of their fellows. Their history is the record of warfare waged by one species of inhabitants on another, fulfilling the general law of nature, which bids all eat, and be eaten in their turn; but still we cannot say that the ultimate purpose for which they were created was that they might devour each other. Men and wolves devour sheep; but we cannot suppose that the purpose for which sheep were created is simply that they might be devoured by wolves and men, any more than we could say that the purpose for which men and wolves exist is, that they might eat sheep.

The system of living nature is too mighty in its extent, and too wonderful in all its parts for us to suppose, that because we know the carnivorous animals prey indiscriminately on their weaker brethren, the climax of the whole is, that a lion shall be fed in the wild woods of Africa, or a tiger in the jungles by the Ganges.

This would be but a sorry conclusion; and, if we come only thus prepared, and proceed only thus far, the *cui bono?* will stand up like a lion in our path, and demand of us, Wherefore all this display of wisdom, of power, and of goodness, which bears the indelible impress of Divinity upon its every step, if the ultimatum to be reached is nothing more than the feeding of a ravenous beast in the wilderness?

Can we, for a moment, suppose that this scene of moral disorder

was the ultimate end for which the material system was created ? That the earth was impelled in its annual and diurnal course by the hand of Omnipotence—that it presented new beauties every opening spring, bringing forth the treasures of autumn, and displaying so many sublime and variegated landscapes—that the sun diffused its light, in all its regions—that the moon cheered the shades of night from one generation to another, during so *many myriads of years*, merely that the successive generations of animals might mingle in horrid warfare, and then sink for ever in the shades of annihilation. Yet, such a conclusion we are obliged to admit, if there is no future state in which these seeming disorders will be corrected, and the plan of the Divine Government more fully developed.

But we will extend this argument still farther. There is a general lesson arising from this geological inquiry, which breathes of immortality. If we could throw a glance over our globe, unravel its history, and trace it through all its gradations up to the present time—what are the conclusions we should arrive at ? Why, that from the period when the mighty and omnific voice first called light from the chambers of darkness, and sent our terraqueous planet to roll through a silvery-sheeted domain, there has been a constant progressive development of life. Each successive stratum of earth has proved how the original plan was kept in view, but steadily improved ; and when ages after ages had rolled on, and the days of its colossal and gigantic inhabitants were numbered, then did the Almighty decree that our planet should be a home for starry spirits, fired with the glories of genius, and reveling in the bright landscapes where angels build their homes.

But does the great design abruptly terminate here ? Has the earth arrived at the ultimate stage of its existence ? Have its inhabitants attained the utmost perfection of which they are capable ? Are there not further convulsions and still higher beings in contemplation ? What ground have we for affirming that a more perfect animal may not, hereafter, be brought into existence—a creature more highly endowed, and suffering far less from the evils of imperfection under which our race now endures so much. No one can tell but that, as many of the former inhabitants of the globe which existed before the human race was created are now extinct tribes, so the human race itself may hereafter, like them, be only known by their fossil remains, and other beings found upon its surface as far excelling us in power and wisdom as we excel the mastodon and the megatherium ; *and who, on contemplating our fossil remains, may then be as incredulous and as sceptical, with regard to our immortality, as many of our readers may possibly be of the immortality of brutes.*



This is one of the mysteries of mysteries—the replacement of extinct species by others. It appears to be a very inadequate conception of the Creator, to assume it as granted, that his combinations are exhausted upon any of the theatres of their former exercise; though in this, as in all his other works, we are led by analogy to suppose that he operates through a series of intermediate causes, and that, consequently, could it ever come under our cognizance, there would be found to be a natural, in contra-distinction to a miraculous, purpose.

The conclusion to which we naturally arrive from this argument, is—that each animal was created, first, for its own sake, to receive its portion of that enjoyment which the universal Parent is pleased to impart to every creature that has life—to bear its share in the maintenance of the general system of co-ordinate relations, whereby all families of living beings are reciprocally subservient to the use and benefit of one another.

Under this head only can we include their relations to man, forming, as he does, but a small, although a most noble and exalted part of the vast system of universal life, with which it hath pleased the Creator to animate the surface of the globe.

But this is not the only conclusion which we arrive at from the geological inquiry concerning the history of the inferior animals. There is another, and a very important one too. It is a very commonly received opinion, that *death* was inflicted on the entire animal creation as a penal dispensation consequent upon the sin of our first parents. We believe that the Scriptures afford no authority for such an opinion, or that it is affirmed or alluded to by any one of the inspired writers: “but it crowds the pages of poets\*, and the

\* Thus we read in Milton :

Of man's first disobedience, and the fruit  
Of that forbidden tree, whose mortal taste  
Brought death into the world, and all our woe.

*Par. Lost*, i, l. 3.

And again :

Discord, first  
Daughter of sin, among th' irrational  
Death introduced, through fierce antipathy :  
Beast now with beast 'gan war, and fowl with fowl,  
And fish with fish ; to graze the herb *all* leaving  
Devoured *each other*.

*Buckland's Inquiry concerning Death.*

Our immortal Milton, the finest poet and the worst divine, must have held very singular zoological opinions, since the major part of them, as they do still, kept to their former food. We recommend those who wish to become better acquainted with the subject to read “Buckland's Inquiry concerning Death.”

tablets of painters; and, through them, has been from infancy so deeply imprinted on most men's minds, that maturer judgment rarely stops," says Dr. Buckland, "to inquire precisely as to the source of such notion upon these matters, unless some special occasion calls for its investigation."

In this instance the ancient story of the earth agrees with the statement of Revelation, as it does, we believe, in every other case, when properly understood and rightly interpreted; for we have already seen that various generations of living creatures ranged the plains, and swarmed the lakes, and were blotted out from life long, long before man ever placed his foot on this wondrous soil.

"When our minds dwell on such a subject as this, we seem to have entered another world, amidst the eternal roar and clash of those angry elements which had not then subsided into the fixedness and tranquillity with which they now meet our gaze. We discern the finger of design, and we hear the voice of the Deity from those vast oceans in which was going on the process of a world's formation, and the petrified relics and shattered remains of mysterious monsters come forth, such as never met the eye of humanity. And why do they come? Why, but to tell us that the same Providence whose wisdom all science acknowledges, the beauty and harmony of whose government is seen alike in summer's calm and in winter's storm, sheds the same bright and beautiful influence over the waves in which the ichthyosaurus sported and the forests through which the mammoth roamed\*." Surely, it would be a very lame and impotent conclusion, to suppose that the Deity created these seeming monsters, these *ancient lords of the creation*, besides millions of creatures such as these, and kinds unnamed by man, for no other purpose than that they might eat each other up, "like the Kilkenny cats in the saw-pit." Yet, such a conclusion we must arrive at, if there is no future state, nor other friendly planet where their spirits might safely migrate.

[To be concluded in our next Number.]

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## A CHARGE OF FALSEHOOD REFUTED.

By W. YOUATT.

As two most valuable contributors to THE VETERINARIAN have done me the honour, unsolicited, to review my little work on "The Extent and Obligation of Humanity to Brutes;" and, in his

\* Ince's Wonders of the World.

eloquent Address, Mr. Field alluded to it in terms so highly flattering, I trust that I shall not be considered as improperly occupying a page or two of this Journal in vindicating that Essay from a charge of gross falsehood. The contributors to that Testimonial, which, it may be readily supposed, I most dearly prize, are identified with the "literary" honesty or mendacity of their "labourer in veterinary science;" and they will not only pardon this intrusion, but would despise me were I not successfully and fully to repel the accusation.

I had been speaking of the too frequent miserable end of the poor horse when he was no longer useful to his master; and I say—

"There is one disgraceful violation of the dictates of humanity arising from the frequency with which the racer often changes his master; and the carelessness of all but a few honest hearts how it fares with him when he has answered their purposes. AMBO, the fastest mile-horse of his day, and that won the Holywell Mostyn stakes three years in succession, was consigned to drag an opposition coach that ran through Shrewsbury\*. When no longer capable of that, he was degraded to yet lower labour; and was at length found dead in a ditch from absolute starvation. HIR or MISS, a good racer, was, during the last year of his life, seen drawing coal in a higgler's cart in the same town. MAMELUKE is at this time drawing a cab in the streets of the metropolis; and GUILDFORD, after having won for his different owners seventeen races, was afflicted with incurable stringhalt, and was sold at a repository for less than £4. Thence the hero of the turf was doomed to an omnibus. There he was cruelly used; the spasmodic convulsion that characterizes stringhalt sadly aggravating his torture. The skin was rubbed from his shoulders, his hips and haunches were bruised in every part, and his stifles were continually and painfully coming in contact with the pole. In this situation he was seen by the veterinary surgeon to the Society for the Prevention of Cruelty to Animals, and bought in order to be slaughtered."

The Editor of the *Times* (August 21, 1839) quotes this passage, and adds, "Our attention has been called to this quotation in an Evening Paper. Why does not some person connected with the turf expose the gross falsehoods of which a correspondent assures us that it is made up? Mr. Tattersall, he says, can tell the public all about the horses named in the quotation."

In the course of the morning, Mr. Thomas, the Secretary to the Society for the Prevention of Cruelty to Animals, favoured me with a call. He shewed me the accusation which was thus brought against my work, and kindly offered to take the matter up with regard to "Guildford," of whose miserable state, and the cruelty that was inflicted on him, he had personal knowledge.

On the 22d of August the following letter appeared from him in the columns of the *Times*:

"Sir,—In your paper of this day there is an observation by the Editor, grounded upon information received from a Correspondent, calculated to create

\* "Oswestry" it should have been.



a belief that certain assertions by Mr. Youatt, late Veterinary Surgeon to the Society for the Prevention of Cruelty, regarding the condition to which some of the most remarkable race-horses have been reduced, are unfounded. In one particular, at least, I am enabled to corroborate the truth of Mr. Youatt's statement.

"The horse Guildford, after having passed through the course of suffering, and endured the treatment there described, was purchased by the Society from Mr. Bardell, the omnibus proprietor, for £3 14s., for the purpose of terminating his sufferings by death.

"With regard to the other circumstances enumerated, although without any immediate personal knowledge of the facts, yet, from circumstances connected therewith, I have no hesitation in declaring my belief that the details are all equally correct.

"I have the honour to be, &c.

"Aug. 21, 1839.

"HENRY THOMAS."

To this the Editor adds the following note :

"We will not dispute what Mr. Thomas says he knows as to one of the horses mentioned ; but as to the others, we believe the statements in the paragraph to be false, or greatly exaggerated. We invite the attention of our Correspondent to the above letter."

Here the Editor of the *Times* becomes personally implicated. He publicly states that "he believes the statements in the paragraph to be false, or greatly exaggerated."

In the course of the 22d of August, my friend Mr. Daws called upon me with the news of this accusation, and told me that he shall take up the case of Mameluke, which came under his personal observation ; and, accordingly, two days afterwards, the following letter from him appeared in the *Times* :

"Sir,—From some observations which have appeared in your journal, within the last few days, respecting the accuracy of statements relative to several horses, made by Mr. Youatt in his work on "*Humanity to Brutes*," I feel myself in a manner called upon to come forward, and substantiate the remarks of that gentleman, being one of those to whom he acknowledges his obligations for information received, as well as one among those to whom the work is dedicated.

"The cases of AMBO and HIT OR MISS are vouched upon the authority of Mr. Hickman, veterinary surgeon of Shrewsbury\*.

"With respect to MAMELUKE an error is said to have been committed, which I strenuously deny, and a short explanation will easily adjust the matter. I furnished Mr. Youatt with the information respecting him, and, if he has erred, the blame rests with me.

"This said horse is one that was got by the original Mameluke out of a thorough-bred mare ; was trained and tried, and not proving sufficiently fast, was drafted and sold by the very gentleman to whom your anonymous correspondent refers for information, Mr. Tattersall, as a Mameluke colt. From that time to the day of his death, which happened a few months since, I can trace him, and bring forward positive proof from his several respective owners. He was publicly known by the name of his great progenitor, and he possessed the same symmetry, proportions, colour, and temper.

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\* See the next page.

"The pedigree and performances of Guildford were also furnished to Mr. Youatt by me. A reference to the *Racing Calendar*, or to page 432 of the eleventh volume of *THE VETERINARIAN*, where there is a lengthened account of his life, death, and *post-mortem* examination, will convince your correspondent of the accuracy of this statement.

"I can also produce abundance of proof respecting this horse, if required; and challenge your correspondent to come fairly and boldly forward to prove those gross falsehoods of which he assures you the work is made up.

"Trusting that you will give insertion to these observations, I am, Sir,

"Your very obedient servant,

"Infirmary for Domesticated Animals,

"HENRY DAWES, V.S."

"Gresse Street, Rathbone Place,

"22d Aug. 1838."

It is well known to all my friends that the greater part of the work on "Humanity" was dictated by me as I lay on a sick, and, as we thought for awhile, a dying bed. In consequence of this many of my vouchers were mislaid. I could not therefore adopt the advice of Mr. Dawes, to crush the matter at once by giving my authority for the disgracefully cruel end of "Ambo" and "Hit or Miss," for I had forgotten from whom I had derived my information. I wrote immediately to Mr. Hickman of Shrewsbury, Mr. Hayes of Rochdale, Mr. Hales of Oswestry, and Mr. Cartwright of Whitchurch. The last gentleman told me that I had derived my account from Mr. Hales, and that he—Mr. Cartwright—always understood that Ambo died in a ditch, and was shamefully used.

From Mr. Hales I received a most satisfactory letter on the following day:—He says,

"I am satisfied that your account of these two horses will be found substantially, if not *literally*, correct. As regards Ambo, I certainly was not present when

'The high mettled racer heav'd his last sigh;'

but that he lived in want and misery is undoubted, and death in any shape must have been welcome to him. Of his 'stage-coach' adventures I am perfectly cognizant, having more than once seen him running an opposition coach through Oswestry, and when that concern broke up I could have purchased him for £5. After that, as you may suppose, the poor fellow's misery in good earnest commenced; and I have been told that a sporting gentleman, being informed of the degraded state of the old horse, sent to purchase him, that he might be shot, but he was too late, 'Ambo was dead.'

"Hit or Miss covered in this neighbourhood for several seasons, and, after becoming blind and getting out of favour, was sold. He did draw coals from the Shrewsbury wharf to different parts of that town; and the old horse would take a load of coals up the Castle-gates—a steep pitch in the streets—better than any of the jagger's horses. There has been more than one 'Hit or Miss' on the turf, but the horse to which I allude was by Hap-hazard. If necessary, I could mention other instances of horses having 'fallen from their high estate.' I recollect Melilæus being offered to me for £4."

"I am, &c. &c. &c.

"J. M. HALES."

After waiting a little while to see whether any one would take up Mr. Daws's challenge, I sent to the Editor of the Times a letter expressed in guarded and moderate terms, referring to the information derived from Messrs. Thomas and Daws, and copying the account of Mr. Hales, and telling him that I thought he would grant me a small space in his journal, to complete the exculpation of myself from a very serious charge. I added, that I regarded the subject of my work as too sacred to be propped up by falsehood, and that I should be obliged—deeply so—to any one favouring me with his local habitation and his name, if he would point out, publicly or privately, any error that I might have committed.

Day after day passed over, and my letter was not inserted. I wrote again, and, once more, several days elapsed. I happened, one morning, to mention this to a friend, whom I met in the coffee-house to which I was accustomed to go to examine the paper, and he suggested the possibility of my having overlooked the short notices to correspondents, occasionally placed above the leader. I never dreamed of looking there, for, a Journalist myself, I had been calculating on what I should have done in a similar case, and how eagerly I should have admitted the explanation of any one to whom I had done injustice, and I had been looking here and there in the columns of the paper for my letter of explanation. However, I called for the file, and I found, dated about three days after my letter had been sent—"MR. YOUATT'S LETTER IS AN ADVERTISEMENT."

And so the matters ends. I trust that I have been able to exonerate myself from the charges of "falsehood or gross exaggeration," and I challenge any one to prove even an unintentional error in the work in question.

As for the Editor of the Times, who, even if he had considered my letter an advertisement, might, in one short sentence, have expressed some regret for the unfounded charge which he brought against me, I leave him, and also his correspondent, to the mingled indignation and contempt which all anonymous calumniators deserve.

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## CANINE MADNESS.

IN justice to Mr. SPOONER, V.S. of Southampton, we publish the following letters on the subject of rabies. They do him credit; and other parties, if they have human feeling about them, must bitterly repent their folly.



## No. I.

*To the Editor of the Hampshire Advertiser and Portsmouth Herald.*

Sir,—I am induced to trouble you with a few observations on the subject of Canine Madness, not so much in consequence of the very erroneous ideas prevailing on the subject, as from the lamentable effects that are likely to attend a belief in these errors. There have lately been several cases of rabies in Southampton, and the neighbourhood, and many dogs have been destroyed in consequence of having been bitten, or supposed to have been bitten, by others either mad or imagined to be so. Other persons less timid, or less careful, have been contented with having their dogs dipped in the sea, a practice the most stupid and absurd that can be imagined. If a dog is destroyed that has bitten a person, and the fact of his being mad, or otherwise, is not clearly ascertained, how much anxiety and dread are produced in the mind of the sufferer, as well as of his friends! The dog should be properly secured, when, if he is mad, the symptoms will soon decidedly manifest themselves, and, if otherwise, the mind will be relieved from a state of uneasiness, the extent of which is more easily imagined than described. A dog, only last week, supposed to be rabid, was hunted down and destroyed. In nineteen cases out of twenty, an examination of the body of a dog will enable us to decide on the fact of his having been rabid or not. Rabies is a specific disease, produced by inoculation—generally a bite—with the saliva of a rabid animal. It prevails at all seasons of the year, and is not occasioned either by heat, thirst, or fatigue, although these agents, as well as any others that produce excitement in the system, will cause the symptoms to be earlier exhibited. The time that elapses between the bite and the manifestation of the symptoms is very uncertain, varying in the dog from a fortnight to five or six months; the usual time, however, is from six weeks to three months, but in the human being a longer period elapses, viz. from from six weeks to twelve months, and even more. When the symptoms of the disease have once been decidedly exhibited, death, whether in the human being or the brute, is the inevitable result, all remedies (and hundreds have been tried) have invariably failed. The precautionary treatment, however, when judicious, is almost uniformly successful. It consists in the total eradication of the poison by the removal of the bitten part, either by the knife or cautery, or both combined. No other treatment can be depended on, although many are recommended. This plan should be adopted as soon after the bite as possible, but should not be neglected at any time prior to the manifestation of the disease; for it is a great mistake to suppose that the operation is useless unless immediately performed.

I am, Sir, your obedient Servant,

W. C. SPOONER.

June 27, 1839.

## No. II.

*To the Editor, &c.*

Sir,—I feel less reluctance in again addressing you on the subject of rabies, inasmuch as, during the past week, several persons, as well as animals, have been bitten by a mad dog: and the same day on which this mischief was done the animal was pronounced to be *not* in a rabid state by individuals who either

ought to know better, or otherwise be less confident in their decisions on matters on which they are so ignorant ; for, owing to this opinion, proper precautions were neglected by some of the injured parties. The chief ground, I understand, that led to this sage decision, was the circumstance of the dog not refusing water when it was offered to him ; these persons not knowing that in the dog there is no dread of water, though often an inability to swallow it.

I did not see the dog in question before he was destroyed ; but, from a detail of the symptoms, I entertained little doubt of his having been in a rabid state. However, two days afterwards, hearing that it was reported that the dog was not mad, I sent to the owner's house, and had the carcass of the animal dug up, and assured myself, beyond all question, by a post-mortem examination, that the case was one of decided madness. I then felt it my duty to apprise parties who had been bitten, or who had had animals bitten, of the real truth of the matter, in order that they might be upon their guard. I take it, Sir, that errors on these matters, which affect so much the comfort and safety of the public, should always be pointed out, whether they are leaning to the side of safety or otherwise.

I am, &c.

July 10, 1839.

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### No. III.

*To the Editor, &c.*

Sir,—Your readers will bear in mind that, about two months since, I related a case of rabies, together with some advice on the subject. Now, as this opinion was disputed at the time, I feel that, in justice to myself, and as a caution to the public, the melancholy sequel of the case should be related. In my former letter I mentioned that, among others, a child had been severely bitten by the dog, and that, as soon as I had examined the body of the animal, I made it my business to find out the friends of the child, and to assure them, positively and unequivocally, that the dog had been rabid, advising them, at the same time, to have the parts either excised or cauterized. I called a second time, a few days afterwards, to ascertain if my advice had been adopted, but found that it had not—that the surgeon in attendance, who had seen the dog before he was destroyed, persisted in his former conviction that it was not mad, and that, in consequence thereof, neither cauterization nor excision had been resorted to. I reiterated my former statement and advice, then feeling that I, at any rate, had done my duty in the matter. Accordingly I heard nothing more of the case until Saturday last, when I was informed that the child, who had been removed to a distant town, had been seized with the dreadful symptoms of hydrophobia, and yesterday I learned that these symptoms had terminated in death. I trust this melancholy and distressing case (doubly distressing, inasmuch as, in all probability, the child would have been saved if proper measures had been resorted to) will operate in inducing parties who may read this or hear of the case, should they or their friends be bitten, by no means to neglect the employment of the only measures on which reliance can be placed. To this I would add—and I am sure that I shall be borne out by nineteen surgeons out of twenty—that this treatment, viz. cauterization or excision, should be adopted not only in cases of certainty, but in all cases of doubt. For my own part, I am willing, in order to prevent the spread of this dreadful malady, at all times to examine the bodies of suspected animals for the poor gratuitously, as in the case which led to this unfortunate consequence. By thus reducing doubt to certainty, and ascertain-

ing whether a suspected animal is mad, proper precautions can be adopted, or the mind of a person who may have been bitten relieved from a state of great uncertainty and distress.

I am, Sir, your obedient servant,

W. C. S.

Sept. 3, 1839.

## THE VETERINARIAN, NOVEMBER 1, 1839.

*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

THE Principal Veterinary Surgeon has already been called upon to discharge one of his most important duties. The removal of Mr. Jex to the Scotch Greys caused a vacancy at the Cavalry Dépôt at York, and Mr. James Robertson, a graduate of the Edinburgh School, presented himself as a candidate for that situation.

We were saying in our last number that a Board of Veterinary Examiners, selected from the household and other troops, was desirable, in order to assist the Principal Veterinary Surgeon, and to secure the administration of justice between the rival candidates that might occasionally present themselves. This, however, is not likely to take place, because the examination of the medical candidates in the foot service rests with the Principal Surgeon, Sir James MacGregor, and his duty is supposed to be, and doubtless is, honourably discharged. The proof of this is, that some medical friend, at his request, sanctions by his presence, and assists at, all these examinations.

Mr. Cherry, much to his honour, has followed the example of the other Principal Surgeon, and requested the assistance of a veterinary surgeon who stands deservedly high in the estimation of all his brethren,—Mr. William Percivall, of the First Life Guards. Before these gentlemen Mr. Robertson passed his examination, and has been appointed to the dépôt.

Both these gentlemen are fully aware how much the general reputation and acceptance of the veterinary practitioner depends on the character of those who are appointed to cavalry regiments; and they deeply lament to what extent, in days that are gone by, the profession suffered from the ignorance and general bearing of those who inadvertently, and without due inquiry—we use the mildest terms we can, as we are speaking of former times—obtained admis-



sion into the service. So far the aspect of affairs is satisfactory, and our profession promises to assume a higher and a juster position.

The commencement of the ensuing session is at hand with regard to both schools. Our wrapper announces the 11th of November as the day on which the professional labours of the Northern School will commence, and we have been told that the introductory lecture at the Southern School will be delivered on the 18th of the same month.

The concours of veterinary surgeons from the country will, doubtless, be very considerable at both schools. The Northern School will now for the first time boast of privileges, the justice of which should long ago have been acknowledged.

Mr. Dick will continue his pathological and anatomical instructions. Qualified assistants will be found in the dissecting-room, and the theatres of most of the professors in Edinburgh are thrown open to the veterinary student.

In the Southern School there is the first change of professors which has taken place for nearly half a century, and also a promised return in the instructions of that school to the objects to which it was in its infancy pledged,—the medical treatment of all domesticated animals. The members of this school will, doubtless, flock from every quarter to congratulate the professors and each other on these most desirable and important changes, and to ascertain to what extent they may dare to expect that their long-cherished and ardent hopes are about to be accomplished. How much will depend on the events of the first day—"the great, the important day, big with the fate" of the profession to which we are devoted! The congregated members will receive with respect and gratitude every pledge of improvement. They will eagerly rally round the teachers of the new school, for so, in a very important sense, it must henceforward be considered. They will constitute a phalanx through which the enemies to the onward progress of our art—if such there be—will attempt in vain to penetrate. All that they will require will be *a heart devoted to the cause—sufficient talent and experience and physical power to effect the contemplated changes, and the exposition of a plan, simple, feasible, and fully embodying that which has so long been the object of their ardent wishes.* That being granted, it will be

utterly impossible for those who may be governed by interested views or malignant feelings to arrest for a moment the progress and the triumph of veterinary science.

The introductory lecture will be delivered by Professor Sewell, in the Theatre of the College, at twelve o'clock.

May the Editor be permitted to add, that at half past one o'clock he will be happy to see every veterinary surgeon, whether from town or country, to partake of a plain luncheon? He would not have dared to solicit this honour if he had not been for twelve long years a debtor to those by whom THE VETERINARIAN has been fed and nourished, and if that debt of gratitude had not been lately increased by the valued testimony of their kindly feelings towards him which he has lately received. Every practitioner, whether or not the Editor has had the honour of being previously acquainted with him, or to have lately seen him, is included in this invitation.

Mr. Morton's oration at the commencement of the third session of the Veterinary Medical Association will not be delivered until five o'clock; so that there are two or three hours which may be happily spent, and our communings with each other may be productive of much good.

At five o'clock Mr. Morton's oration will attract us to Freemasons' Hall. No special invitation is needed to ensure our attendance there, nor to induce us to be present at the Third Anniversary Dinner of the Veterinary Medical Association, which will follow at six o'clock.

This will be a busy, and, we trust, a happy day. In these intercommunications with each other, the feelings and the hopes of each will be freely expressed; and that bond of union may be established, and that triumphant progress of our art commenced and assured, which will cause this day to be regarded as one of the most important and the happiest of our lives.

On the following day Assistant-Professor Spooner will commence his invaluable course of lectures on the anatomy and physiology of all domesticated animals, and also his superintendence of the dissections of the pupils. The proper discharge of these arduous duties will require no slight degree of labour and self-devotion; but they are suited to the talents and habits of the man.

Mr. Barthe, whose peculiar neatness of dissection, and accurate delineation of anatomical subjects, are well known to all his fellow-

students, will undertake the duties of the sub-curator of the Museum, and the Assistant Demonstrator.

On the evening of the following day, Mr. Morton, the recognized Lecturer on Materia Medica and Pharmacy at the Royal Veterinary College, will commence his labours, of the value of which, the ardour with which he pursues every object connected with the improvement of veterinary science, and the "Manual of Pharmacy," with which he has favoured the profession, are sufficient pledges.

If aught more were needed, the Theatres of King's College, Thomas's, Guy's, and Bartholomew's, are free to the veterinary pupil. This is honourable to the Professors, and demands the gratitude of the student; but he will now probably find within the walls of his own College all that can be necessary for him in the successful pursuit of his practice: he will not, therefore, spend any considerable period of his short residence in the metropolis in wandering far away in order to attend on lectures highly valuable in themselves, and indispensable to the student of human medicine, but a small portion only of which can concern him.

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Several students of the last year's class have asked us whether the law which requires a residence of eighteen months at the Veterinary College will be enforced with regard to those who were pupils prior to the late alterations. We cannot give any reply from absolute authority, but we believe that the case will stand thus:—The law will not be made absolutely retrospective. The pupil who entered at the College when a twelvemonth's residence only was required will be permitted to present himself for examination at the expiration of that period, if his residence has been continuous; but, otherwise, an attendance for a period of time sufficient to complete the twelvemonth will be demanded.

To a medical pupil at Worcester, to whom an earlier reply ought to have been given, and who asks us "What is requisite for passing the Royal Veterinary College?" we can only say, "Eighteen months' pupillage at the College; and the harder and honester the work, and the more assiduous the endeavour to become *au fait* at the management of the horse and cattle, and the performance of many a little manipulation about them, the better the chance of ultimate success."



## OBITUARY.

## M. HURTREL D'ARBOVAL.

LOUIS-Henri-Joseph Hurtrel d'Arboval was born at Montreuil-sur-Mer, on the 7th of June, 1777. Several members of his family had been distinguished among the magistracy of that town from an early period of the seventeenth century.

At three years of age he lost his father; but, under the care of his mother, he, in due time, commenced his education at Boulogne. During the reign of the Terrorists, 1793, he was arrested, with his mother and grandfather, and confined in the prison of Abbeville; and being restored to liberty on the eighteenth Brumaire, he sought an obscure retreat in the country, until the name of "*suspected*," which this imprisonment had entailed upon him, was forgotten. It was not until 1798 that he came to Paris, in order to complete his education, and he then entered himself at the school of Alfort.

The decided love which he had always evinced for the study and management of the horse, determined him, while at Alfort, to devote all his disposable time to the exercise of the riding-school, and he placed himself under the instruction of the celebrated Franconi.

In 1802 he returned to his native country, and soon married. Being possessed of a considerable independent property, he employed the knowledge which he had acquired in gratuitous attendance on the horses, cattle, and sheep of his friends, and the neighbouring farmers. At the period when Hurtrel d'Arboval thus devoted himself to the practice of the veterinary art, there were few well-educated or instructed veterinarians in any of the remote districts of the country. Veterinary schools had existed for nearly forty years, and yet the greater part of those to whom the profession was abandoned were ignorant empirics, who obstinately adhered to the practice of their forefathers, notwithstanding the absurdity and ruinous consequences of that practice. It was Hurtrel d'Arboval who, first in his own immediate neighbourhood, and gradually through a greater extent of country, elevated the veterinary profession from the abject state into which it had been plunged, and established the evident and true distinction between the educated practitioner and the ignorant pretenders by whom he might be surrounded. The success which attended his practice, and the practice of those who had duly studied the principles of the profession, compared with that of the charlatan, produced the desired impression on the horseman and the agriculturist.

His reputation, and the reputation of those who trod in his footsteps, being, to a very considerable extent, established, and his

private fortune placing him superior to any desire of accumulating additional wealth, he abandoned himself altogether to the pursuit of veterinary science, and to that love of the horse which had been his earliest delight. During more than twenty years he pursued this course. He gave half of the day to his love of equitation, and to the care—the gratuitous care—of the sick animals that were brought to him, and the other portion of the day was devoted to a new object, and a truly important one, the committal to writing of his daily increasing experience. It is, indeed, gratifying to record the career of a man like him.

From 1803 to 1805, the station of a strong cavalry force in the arrondissement of Montreuil gave him the opportunity of observing, on a most extensive scale, the ravages of farcy and glanders among the regimental horses.

His reputation was now established, not only in Montreuil, but in every part of France. He was elected an Associate of almost every agricultural and scientific society; and he contributed one or more valuable papers to each society with which he became connected. At the same time, unknown almost to his most intimate friends, he was laying the foundation of that noble work, the Dictionary of Veterinary Medicine, which will immortalize him.

In 1815 a murderous typhoid epizootic appeared in the department *du Pas-de-Calais*. He was named especial commissioner to inquire into its cause and its cure. With all his characteristic zeal he devoted himself to the task which was assigned to him; and it was owing to the peculiar and effective measures which he adopted that the plague was staid. He published a summary course of instruction on this subject. It was diffused through the different departments of France, and it saved the lives of thousands of cattle. This gave him another claim on the respect and gratitude of his country.

In 1819 he published, at the request of the minister of the interior, some most valuable instructions on the treatment of those peculiar diseases of cattle which in France, as in England, carry off thousands when a sultry summer is succeeded by a cold and rainy autumn. This work soon reached the fourth edition.

While Hurtrel d'Arboval was thus distinguishing himself as a writer, he was becoming more and more a practical man. He had a considerable farm of his own. It was managed under his immediate superintendence, and his experiments on various important points were on the largest scale. In 1822 he published his treatise on *La Clavelée*, a singularly destructive pustular disease, little known in England, but which occasionally decimated the continental flocks. "This work," in the language of M. H. Bouley, to whom we are indebted for much of the account which we are

enabled to give of Hurtrel d'Arboval, "so remarkable for the lucid manner in which it is written, for the numerous and scientifically arranged facts which it contains, and for the conclusions to which it seems to have legitimately arrived, is one of the most precious legacies for which veterinary science is indebted to him."

From 1821 to 1825 he was engaged in contributing numerous articles respecting veterinary surgery and medicine to "The Abridged Dictionary of Medical Science." It may be somewhat doubted, whether this employment had not, to a certain degree, an unfavourable influence on his future writings; and whether his instructions, and his mode of illustration and reasoning, had not more reference to the arguments and facts of human physiology, than to those deductions which can alone be legitimately drawn from the peculiar structure and food and habits of the various animals that come under the care of the veterinary surgeon. We confess that this has, in our minds, been a serious objection to many of the general physiological elucidations of Hurtrel d'Arboval. Carefully guarding our language, and the deductions which may be drawn from it, we confess that there are few things of which we have so much dread in the education of the veterinary pupil as these general systems of physiology, which are deemed by some persons to be so important. Every animal has a physiology of its own; and it is only by that knowledge of its conformation and its functions which it should be the object and the duty of the medical attendant on that animal to acquire, that a useful and satisfactory practice can be grounded.

But we are somewhat antedating one of the noblest labours of Hurtrel d'Arboval.

It was not until 1826 that the work which will ever be associated with his name, "The Dictionary of Veterinary Medicine and Surgery," made its appearance. "Le Recueil de Médecine Vétérinaire" first appeared in 1824. "Le Journal Pratique" and "Hurtrel d'Arboval's Dictionary" in 1826, and the British "Veterinarian" in 1828. We may assume these as the epochs of the revival of veterinary literature.

The publication of such a work would have daunted the greater number of the best instructed veterinary surgeons. Works of any value in veterinary medicine were, at that time, few and far between. Such as they were, they were contained in the annals of certain agricultural societies, or periodicals of general literature, or remained in their manuscript form, or were stored in the libraries of veterinary surgeons, or confined to the lectures of certain professors. To collect all these scattered, and, for the most part, unknown materials,—to make a proper selection from them,—to arrange them according to the relations which existed between



them,—to discard the thousand erroneous opinions which had prevailed during the previous ages of darkness—in a word, to elicit harmony from a chaos so discordant,—this was the end which Hurtrel d'Arboval proposed to himself, and which he attained by the publication of his Dictionary. Alone and unassisted he accomplished this mighty task. If in four closely-printed volumes there were certain imperfections and errors, the candid reader will at once acknowledge that they were attributable more to the age in which he lived than to any want of talent and research in the author. He will also acknowledge that there are fewer inconsistencies—and errors too—in a work conducted by one talented and conscientious writer, than if many literary labourers, with peculiar and inconsistent principles, had undertaken it.

The author was perfectly aware of the imperfections of this attempt at the classification of the principles and practice of veterinary medicine; and the first edition had scarcely issued from the press ere he was laboriously employed in preparing another and a better. As the physiology of the domesticated animals became more and more known; as facts connected, not with general medicine, but the advancement of our peculiar branch of the healing art accumulated, he erased many of those dissertations on general physiology and medicine by which his first edition was encumbered; and his work became an able and an honest explication of *veterinary science*.

He lived to complete a second edition, increased to six large volumes, although nearly half of that which the first edition contained was erased. It has, perhaps, one fault of considerable consequence—it is too much confined to *French* veterinary literature; but so far as that goes, it may be considered as perfect.

The printing of the second edition commenced early in 1838. The three last volumes of the work were published in 1839; and on the 20th of July he died, aged 62 years. It was singular that his death should so soon follow the accomplishment of his great work. His memory will be the more devoutly cherished by those who justly estimate the value of his labours. Respectfully, and from the heart, we offer this tribute to his memory.

Y.

#### TO CORRESPONDENTS.

We have two valuable cases for which we could not find room in the present number. They shall appear in our next.

The account of the Horse Trial at Bristol was received. It is set up, and shall appear as soon as we can insert it. It is exceedingly interesting, but very long. The Indices will occupy a considerable portion of our next number.

Will those gentlemen who intend to favour us with their company on the 18th kindly send us a note a few days before the time? This will also better enable our worthy Secretary to arrange the proceedings of the dinner. It is not a slight affair which will excuse the absence of any practitioner on that day.

THE  
VETERINARIAN.

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ON THE FUTURE EXISTENCE OF THE BRUTE  
CREATION.

PART III.

*By Mr. W. F. KARKEEK, V.S., Truro.*

[Concluded from page 758.]

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What does philosophy impart to man  
But undiscover'd wonders? Let her soar  
Even to her proudest heights, to where she caught  
The soul of Newton and of Socrates,  
She but extends the scope of wild amaze  
And admiration. All her lessons end  
In wider views of God's unfathom'd depths.

H. K. WHITE.

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CHAINED as we are to the grovelling frailties of the flesh, it is impossible for mere mortal man, unpurged from earthly dross, to survey the dim uncertain gulph which we have dared venturously to explore. If our readers, who have followed us thus far, would scan this fearful chasm, and try to catch but a transient glimpse of its unfathomable depths, they must take divine philosophy for their guide.

The immortality of the soul of man rests not on the opinions or reasoning of philosophers, but on the sure word of God; yet, if animals are inferior in their spiritual substances when compared with men, which they evidently are,—and we are capable of proving that *they* are imperishable,—how much more certain shall we be that our intellectual exertions will not terminate with the dissolution of the corporeal frame! No doubt the testimony of natural reason, on whatever exercised, must of necessity stop short of those truths which it is the object of revelation to make known: but while it places the existence and principal attributes of a Deity on such grounds as to render doubt absurd and atheism ridiculous, it

unquestionably opposes no natural or necessary obstacle to further progress; on the contrary, by cherishing as a vital principle an unbounded spirit of inquiry and ardency of expectation, it unfetters the mind from prejudices of every kind, and leaves it open and free to every impression of a higher nature which it is susceptible of receiving; guarding only against enthusiasm and self-deception by a habit of strict investigation, but encouraging rather than suppressing every thing that can offer a prospect or a hope beyond the present obscure and unsatisfactory state.

We have already taken a faint and distant yet glowing glimpse of a buried world, and the scene which we have viewed has been one of wild and fearful grandeur, telling us, as plain as tongue can speak, of

“The days which have elapsed,  
Hid in the mighty cavern of the past,  
That rise upon us only to appal  
By indistinct and half-glimpsed images;  
Mighty, gigantic, huge, obscure, remote.”

We will now direct your attention upwards, and, behold! you have unfolded to your view the most striking displays of the perfections of the Deity and the grandeur of his omnipotence. You will have set before you objects of overpowering magnitude and sublimity, demonstrating the unlimited extent and magnificence of the universal empire of the Almighty, and shewing that the *great Father of all has it in his power to distribute, endlessly diversified streams of felicity among every order of living beings throughout all the revolutions of eternity*. To the man that can doubt the truth of this, and would ask, Where is the region to which departed spirits of beasts migrate? Where are their souls to have their place of beatitude? I would reply—

“Look upon yon starry vault;  
Survey the countless gems which richly stud  
The night’s imperial chariot: telescopes  
Will shew thee myriads more numerous  
Than the sea sand. Each of those little lamps  
Is the great source of light, the central sun,  
Round which some other mighty sisterhood  
Of planets travel—every planet stocked  
With living beings impotent as thee.  
Now, proud man! now, where is thy greatness fled?  
What art thou in the scale of universe?  
Less, less than nothing.”

Yet of you the God who built this wondrous frame of worlds is careful, as well as of the meanest creature alive; “for, are not two sparrows sold for a farthing, and even one of them cannot fall to the ground without your Father?”

In a subject of this kind it is impossible for us to convey, as we



would wish to do, a distinct idea of the boundlessness of the material universe. If you cast your eye downwards it loses itself in a wilderness of ages—if you analyse a drop of water, you find it peopled with the forms of life so infinitesimal that all power of calculation droops the wing, and flags in the august attempt to convey the idea of number; and again, if you look upwards, and view the mighty orbs wheeling their ponderous forms through space, you are astonished at your own insignificance. The number of systems of the heavens which lie within the range of our telescopes is reckoned to be, at least, a hundred millions. In the regions of infinite space, beyond the boundaries of all these, it is not improbable that ten thousand times ten thousand millions of other suns or systems are running their ample rounds. With each of these systems it is probable that, at least, a hundred worlds are connected. With the solar system to which we belong, there are connected more than a hundred globes of different sizes—if we take into account the planets, both primary and secondary, and likewise the comets.

It is now considered by astronomers as highly probable, if not certain, from late observation, from the notions of gravitation, and other circumstances, that all these systems of the universe revolve round one common *centre*, and that this centre may be as great in proportion, in point of magnitude, to the universal assemblage of systems, as our sun is to his surrounding planets. And here may be a vast universe of itself—an example of material creation, exceeding all the rest in magnitude and splendour, and in which are blended the glories of every other system. If this is really the case, it may, with the most emphatic propriety, be termed the **THRONE OF GOD**.

This is the most sublime and magnificent idea that can possibly enter the mind of man. We feel oppressed and overwhelmed in endeavouring to form even a faint representation of it.

Intelligences of the noblest order, who have attained the most sublime heights of knowledge and virtue, may form the principal part of the population of this magnificent region, and may constitute that august mansion referred to in the Scriptures under the designation of “the Third Heavens,”—the “Throne of the Eternal,”—“the Heaven of Heavens,”—the “High and Holy Place, and the Light that is inaccessible and full of glory.”

It would be absurd to lengthen this subject, in order to prove by argument what every schoolboy believes, that, as the material universe is boundless, so likewise are we surrounded by intellectual beings. There are no parts of space unpeopled with the creatures of intelligence; to imagine the contrary, would be to suppose a vacuum in the universe. It would be at once to say, that

the Deity had expended his machinery—that there was a void in the Divine mind.

In looking throughout the whole of our globe (which, in comparison with the myriads of attendant planets, might be aptly compared to a grain of sand in the great sandy desert), we find a regular gradation from inanimate matter and vegetative life through all the varieties of animal existence, till we arrive at man; but we have no reason to believe that the ascending scale terminates here, at the point of the human faculties, unless we suppose that the soul of man is the most perfect intelligence next to the Divinity. If the scale of being rises by such a regular process to man, by a parity of reason we may suppose that it still proceeds gradually through those beings that are endowed with superior faculties; since there is an immensely greater space between man and the Deity than between man and the lowest reptile on the face of our globe.

Some philosophers have supposed that we might have had a prior existence in another planet, although not conscious of the circumstance. We may have begun our being in Uranus, as the planet which we deem most remote from the sun; or in one still more distant, if such there be—and may thence have migrated into other planetary bodies, till we passed into the human form on the earth.

This is all fanciful conjecture, and visionary speculation; but if it should be true, it would then be probable, that, after death, the mind would take its departure to the next planet between us and the sun, but with no more consciousness of our prior existence on this planet than we have here of any previous existence in Jupiter or Uranus. The mind, or spirit, or whatever makes the real indestructible entity of a creature, might, according to the above hypothesis, lastly wing its way, after a temporary abode in the intermediate planet, into the sun. In that great luminary, which is calculated to be one million of times larger than the earth, the Infinite Spirit may, for the first time, infuse into it, according to its capacity, a consciousness of its prior existence, and of the previous states through which it has passed, with the whole chain of acts and events that formed the substance of its antecedent history.

It appears to be quite accordant with all that we know of the perfection and operations of the Deity, to conclude that a progression of intellectual beings exist throughout the universe; and, if it should please him to make men angels, to fix them after a period in a planet where death never comes, why, by the same reasoning, may he not elevate the brute, by giving him the same power and faculties which men now possess, and thus bring destinies to pass from one state of corporeal organization to another, in a long series

of changes, till their original vehicles become as pure and refined as light, and susceptible of the same degree of rapid motion?

There are various insects that undergo transformations nearly as wonderful on our globe; but, the circumstances occurring almost constantly before our eyes, we do not consider them as extraordinary or wonderful. The caterpillar is first an egg, next a crawling worm, then a nymph or chrysalis, and afterwards a butterfly, adorned with the most gaudy and beautiful colours. The May-bug beetle burrows in the earth, where it drops an egg, from which its young creeps out in the shape of a maggot, which casts its skin every year, and, in the fourth year, it bursts from the earth, unfolds its wings, and sails in rapture through the soft air.

These are only two of the many instances that might be adduced to shew the probability of a progressive change among the higher order of animals—changes which, however great and interesting to the individual, may not be more wonderful or more mysterious than those occurring in the different states of existence to which a caterpillar is destined.

The conclusion to which we naturally arrive on the last argument is, that it is impossible for the human mind to form too extravagant a conception of the universe; and that, in speculating on the possibility of the future existence of the lower orders of creation, there is nothing improbable; for as the Deity extended to us finite beings his fatherly regard, while there are intellectual beings in existence whose faculties are raised as far above the limited power of man as man is above the lowest reptile on our globe, so His love and care will not stop at man, but *will be extended to the whole of his innumerable family.*

“All are but parts of one stupendous whole,  
Whose body nature is, and God the soul;  
That chang'd through all, and yet in all the same;  
Great in the earth, as in th' ethereal frame;  
Warms in the sun, refreshes in the breeze,  
Glowes in the stars, and blossoms in the trees;  
Lives through all life, extends through all extent,  
Spreads undivided, operates unspent.”

An objection might here be raised to the possibility of believing or admitting the existence of spirit in actuating the most minute and meanest animate organization of matter; yet, when the objection is properly examined and confronted, it will be found that there is no solid foundation for its existence. It cannot be more wonderful that microscopic animals should possess mind, than that they should possess organized frames like our own, and be endowed with feeling and instinct. In the fluids in which they live, they are observed to move with astonishing speed and activity; nor are their motions blind and fortuitous, but evidently



governed by choice and directed to an end. They use food and drink from which they derive nutriment, and are therefore provided with a digestive apparatus. They have great muscular power, and limbs and muscles of strength and flexibility are given to them. They are susceptible of the same appetites, and obnoxious to the same passions. We cannot for a moment deny that these creatures have hearts, arteries, veins, muscles, nerves, circulating fluids, and all the concomitant apparatus of a living organized body? If so, why may they not be actuated by "an immaterial principle," as well as higher animals?

If we might judge from the strength and energy of the living principle as exhibited in some of the smaller animals, we should conclude that the quantity of matter as an element in animal life would give us no idea of the quantity of spirit. "Compare the leap of a fly with the spring of the lion or tiger;—there is no comparison. The march of an ant over rough gravel is as great, in comparison to its volume, as if a dray horse were to cross indiscriminately over London in a straight line; and the distance over which it can travel, among such obstacles, is as much in proportion to its bulk, as it would be to the horse to do forty or fifty miles of this sort of steeple chase in the course of a day\*." We are apt to refer to the wings of the eagle as organs of mighty power in the way of flight; and to admire the beautifully smooth motion of a kite as it glides down the wind, or the graceful floating of a kestrel as it leans on the viewless air; but splendid and graceful, and easily performed, as those motions are, they sink into absolute insignificance when compared with those of the winged insects. "Even the shard-borne beetle, with his drowsy hum, that rings night's yawning peal," as the arch poet of nature most truly and graphically expresses it, has more power of wing than all the eagles that ever breasted the tempest athwart the mountain top. Ascending from the earth, in which he has a power of burrowing downwards as great in comparison as if a miner were to work his way from the surface some twenty or thirty fathoms down to a copper lode, by mere bodily exertion, without "pick or gad," or the removal of any part of the rubbish, and shouldering aside clods and pebbles many times his own weight, he elevates his shards, his wing-covers or elytra, unfolds the filmy expanses of his wings, and winnows the air with them, until the energy produces the humming sound; and any one against whom such a beetle has impinged, when "wheeling his droning flight," can tell with what impetus he cleaves the air.

This, too, is one of the most sluggish-winged insects. Regard,

\* Mudie.

for a moment, the common fly and the gnat, or the bee, for swift motion of the wing; the diurnal lepidoptera, or butterflies, for smooth and easy gliding; and the iridescent gleaming of the dragon-fly, as it starts from place to place by the margin of the brook, as if it were an embodied rainbow dancing in joy before the majesty of its parent sun.

These few examples sufficiently and plainly shew that no notion can be formed of the uniformity of *spirit*, derived from our similar views of *matter*.

There cannot be a doubt that an infinite difference exists between *spirits*, not only in degree, but in kind. There is an infinite difference between created spirits and the divine; and we find in this great fact a conclusive ground for presuming, that there are immense although finite differences among every kind, more particularly in the form, organization, and the movements of their corporeal vehicles. The cherubim, a symbolical image placed in the Holy of Holies, is portrayed as winged animals with four faces, representing the kings and rulers of the animal kingdom: viz. the ox, the chief among cattle; the lion, the king of wild beasts; the eagle, the ruler of the birds; and, lastly, man—he being the paragon of animals, and the undisputed lord of the creation. This symbol shews that there is no slight connexion between the cherubim and the brute creation. A great variety of opinions have been held, both in ancient and modern times, concerning the meaning of those symbols described by Ezekiel, and what they are designed to represent. By modern theologians they seem to be regarded as angels of the highest rank.

These opinions are far from unscriptural. We are informed in the sacred writings that celestial intelligences celebrate the perfections of Jehovah, “because he hath created all things,” and because they perceive “His works to be great and marvellous. They ascribe to him “wisdom and glory, and honour and power, and thanksgiving,” from the display of his character which they perceive in his works. It is impossible to suppose any other sentiment than that of love to exist in the Divine mind towards his creatures; but can this sentiment be so faint and evanescent as the apparent brevity of their lives would lead us to suppose? Must not the sentiments of love in the Divine mind be permanent and eternal? Must they not always continue the same and unchanged? To suppose the contrary would be to suppose a degree of variability and mutability in the Supreme Intelligence, which our moral notions would consider as culpable even in his creatures. Can we suppose that state of the affections in the bosom of a father which would lead him to regard with aversion or indifference tomorrow the children whom he tenderly loved to-day? The phe-

nomena of benevolence, which we remark in such numerous instances, all apparently only part of a great whole, authorize us to suppose others which are necessary to complete the design.

This supposition is forced upon the mind by the circumstances in which it is placed, and by the evidence of so many probabilities in the chequered scene of animated creatures. A future life is the one thing needful to reconcile all the apparent anomalies in the moral administration of the world; without it all is doubt and uncertainty.

In the present world no account appears to be made either of human\* or brute life. Men, as inhabitants of the earth, seem to be of as little estimation in the great scale of being as the microscopic insect or the most minute flower. We behold thousands of human beings with their tens of thousands of animals dispersed over a rich tract of country, swallowed up by an earthquake, swept away by an inundation, or buried under the fiery entrails of a volcano; and in the cases in which these calamities occur, the events themselves seem as much in the natural course of things, as it is to behold the blossom of an orchard blasted by the east wind, or the hopes of the harvest rendered abortive by too much rain or too little sunshine.

It is true that there are instances on record where the special interference of the Almighty has occurred to prevent such catastrophes. There is a little history in the Old Testament, that of Jonah, which shews this in an interesting view, inasmuch as the special care of the Deity extended to the cattle as well as to the other inhabitants. "The prophet, in a moment of strange inconsiderateness, was offended at the failure of his prediction, and he went out of the city, and sat down to see what would become of it; and, vegetation being rapid in those countries, a gourd grew quickly up, and, on the following day, sheltered him from the heat of the noonday sun. In the course of the next day the gourd was destroyed, and, when the sun beat hot upon the head of the prophet, he fainted, and wished to die. And God said to Jonah, 'Dost thou well to be angry for the gourd?' and he said, 'I do well to be angry, even unto death.' Then said the Lord, 'Thou hast had pity on the gourd, for which thou hast not laboured, neither madest it grow, which came up in a night, and perished in a night; and should not I spare Nineveh, that great city, wherein are

\* The supply of men alone to the French army

From 1791 to 1792 was 1,270,000

From 1793 to 1798 was 5,992,000

From 1798 to 1799 was 860,000

From 1804 to 1814 was 3,865,000



more than six score thousand persons that cannot discern between their right hand and their left, and also much cattle\*.' ”

With regard to scriptural evidence, the question is, whether the sacred writings authorize or countenance this subject? The answer to this should not depend on the opinion of man, or any body of men, but on the plain word of God, which should be allowed to speak for itself. This has not been generally the case; and so little regard has been paid to such mode of proceeding, that the word “*perish*,” taken from the passage, “Man that is in honour abideth not, but is like the beasts that *perish*,”—is not unfrequently quoted as being quite conclusive against the future existence of brutes.” Yet where is the biblical critic who would say that the word *perish* is synonymous with *annihilation*? The word *perish* is frequently made use of and applied in the same sense to man. In Isaiah lviit, for example, it means the passing from one mode or state of existence to another.

There is another passage that is frequently quoted against this subject, taken from Genesis, chap. xi, “When God formed man out of the dust, he breathed into his nostrils the breath of life, and man became a living soul.” From this passage it has been argued that the living principle was different in man and the brute. It surely can scarcely be considered necessary to refute such a ridiculous absurdity. Those who are conversant with biblical lore well know that the word *soul* is very equivocally used by the Hebrews. It sometimes means that which animates mankind, and that which animates beasts—and sometimes it means a living person. In the 12th chapter of Job it is applied to the inferior animals, in which the Almighty himself asserts his own relation to them, his property in them, and his solicitude for their happiness. He would awe the lordly delegate of his power into a reverential regard for him, in his treatment of the creatures subject to his temporary dominion; for here they are exalted into the office of teachers, and he expressly says that there is no difference in the living principle of a brute from that of a man.

“But ask now the beasts, and they shall teach thee—and the fowls of the air, and they shall tell thee—or speak to the earth, and it shall teach thee—and the fishes of the sea shall declare unto thee. Who knoweth not in all these that the hand of the Lord hath wrought this? *In whose hand is the soul of every living thing, and the breath of all mankind.*”

There is no other book in the world that breathes so affectionate

\* Youatt's Humanity.

† “The righteous perisheth, and no man layeth it to heart; and merciful men are taken away—none considering that the righteous is taken away from the evil to come.”

a spirit towards the dumb members of God's great family as the Bible, or that gives such remarkable pre-eminence to subjects connected with their welfare. In its commencement it expressly states that the beasts of the field, the fowls of the air, the reptiles that crawl upon the earth, and the finny race that inhabit

“The blue depths of the water,  
Where the wave hath no strife,  
Where the wind is a stranger,  
And the sea-snake hath life,”

are all the works of his hand, and the objects of his benevolent providence. When the sabbath was instituted, it was for the purpose that they as well as their rational superiors might enjoy a due portion of rest. When the Almighty ratified a solemn covenant with Noah, and himself and his posterity, they were expressly included in its benefits. “I establish my covenant with you, and every living creature; that is, with you of the fowl, of the cattle, and of every beast of the earth with you, from all that go out of the ark to every beast of the earth.” Not one member of the family is excluded—all are his offspring—all share in his blessing and protection, and all are under his divine government. Whilst he committed the domestic and laborious animals to man, he takes upon himself to preserve and sustain the wild inhabitants of the forest: “Every beast of the forest is mine,” says he, when expostulating with his people, “and the cattle upon a thousand hills. I know all the fowls of the mountain, and all the wild beasts of the field are mine.” Even the wild beasts are provided for: “Thou makest darkness, and it is night, wherein the beasts of the forest do creep forth. The young lions roar after their prey, and seek their meat from God.”

The inferior animals are frequently called on to praise and adore their great Creator for his innumerable benefits. “Praise the Lord upon earth, ye dragons and all deeps; beasts and all cattle, worms and feathered fowls. Let every thing that hath breath, praise the Lord.”

The great Jehovah himself is introduced by the prophet Isaiah\*, saying—“The beasts of the field shall honour me; the dragons and the owls;” or, as the passage is rendered by Bishop Lowth,

“The wild beasts of the field shall glorify me,  
The dragons and the daughters of the ostrich,  
Because I have given waters in the wilderness  
And flowing streams in the desert.”

This is one of the unfulfilled prophecies relating to the inferior animals which never can possibly take place on our globe, but it

will be fulfilled in another planet. The following passage is still more pertinent to our subject\* :—

“The wolf also shall dwell with the lamb, and the leopard shall lie down with the kid ; and the calf and the young lion and the fatling together ; and a little child shall lead them. And the cow and the bear shall feed ; their young ones shall lie down together : and the lion shall eat straw like the ox. And the sucking child shall play on the hole of the asp, and the weaned child shall put his hand on the cockatrice den. They shall not hurt nor destroy in all my holy mountain : for the earth shall be full of the knowledge of the Lord, as the waters cover the sea.”

It is impossible that this prophecy can ever be fulfilled on our planet, constituted as it is ; but it may in some other, where their present natural instincts will be altered, and there will be an end to the oppression and universal war ; when the lion shall no longer thirst after blood, nor the tiger after his prey.

Philosophers and divines, from the days of Zoroaster to the present time, have never been able to solve this problem,—why an all-powerful and benevolent Being should have created evil ; and why a Being of perfect power and benevolence should have formed so many creatures to suffer misery and death ? I would answer these questions by propounding others :—Why is our planet constituted as it is ?

Why is not man a God, and earth a heaven ?

The fact is, that, if we knew all, it would most probably be found that the amount of evil is comparatively little, and that it is productive of good. Death is an evil to the individual dying—at least he generally thinks so ; but to all others beyond his connexion it is a good. If it were not for death, what would become of the living, elbowed by each other, by animals, and by plants ? or, indeed, with universal life, how could any thing live at all, since we live upon each other ? There is only one way to account for this supposed moral disorder, and that is, by supposing this our earth to be a nursery of the immaterial principle—that it here passes into a certain state of existence, in a profusion that seems to our unassisted reason to be extremely lavish, but which will elsewhere be employed in some advanced or ulterior condition, and in other modes of material existence.

There is a very large part of our massy and animated globe which bears no relation to its human population. This supposition therefore seems not irrational, that it may have some unexplained relation with those orbs that have been made expressly to be our sister planets. “*And in that day will I make a covenant for them,*” saith the Lord, by the mouth of his prophet Hosea, “*with the beasts of the field, and with the creeping things of the ground.*”

\* Isaiah, chap. xi.



We envy not the man that would convert the prophecies which we have quoted into metaphor, and deprive them of all literal application; for who shall presume to say to the *Omniscient* and the Almighty, that the past and present races of animals can answer no other purpose hereafter? May they not be reserved as forming many of the customary links in the chain of being, and, by preserving the chain entire, contribute there, as they do here, to the general beauty and harmony of the universe? Such a conclusion we are warranted in coming to, as the following passage from the vision of St. John plainly reveals the whole of God's innumerable family praising their great and Almighty Father before his throne.

*"And every creature which is in heaven, and on the earth, and under the earth, and in the sea, and all that are in them, I heard them all saying,—To HIM that sitteth on the throne and to the Lamb is the blessing, and the honour, and the glory, and the power for ever and ever."*

We will not weaken the words of the apostle by any observations of our own. "This praise," says the Rev. J. Wesley, "from all creatures, begins before the opening of the first seal, and continues from that time to eternity."

Our subject is now brought to a close, and the principal facts connected with it are before you, on which you may exercise your own judgment, and form your own conclusions. The conclusions to which we have arrived are, in our opinion, warranted from all that we know of the Deity, as they exhibit in a striking point of view the depths of His wisdom and intelligence, and the infinite boundlessness of his mercy, in a "golden chain of providence," from the ranks and orders of the blessed in heaven to the lowest organic being of this nether world. There seems no limit to his wisdom, power, and greatness; for the farther we inquire, and the wider our sphere of observation extends, they open upon us in increasing abundance—the study of one preparing us to understand and appreciate another. Refinement follows on refinement, wonder on wonder, till our faculties become bewildered in admiration, and the intellect falls back on itself, in utter hopelessness of arriving at an end. "The character of the true philosopher," says Herschell, "is to hope all things not impossible, and to believe all things not unreasonable." There is something in the contemplation of the general laws that regulate the universe that powerfully persuades us that the opinions which we have advanced are far from unreasonable; whilst the calm, energetic regularity of Nature, the immense scale of her operations, and the certainty with which her ends are accomplished, tend irresistibly to assure us that they are actually probable. Every thing that we see below us, around us, and above us, breathes of immortality. If we de-

scend into the mighty caverns of the earth, we are reminded of the myriads of ages over which Time has waved his plume, and of the strange catastrophes which our planet has felt and seen, in order that she might enjoy her present state of comparative perfectibility, and realize in anticipation the dawning of a golden age. If we cast our eyes around, the changes of the seasons illustrate the bright hope that is within us of a life renewed beyond the tomb. The trees that have faded, and remained dark and grey through the long dreary lapse of winter, clothe themselves again in green in the spring sunshine, and every leaf and every hue speaks of life. The birds that were mute sing again as tunefully as ever; the flowers that were trampled down and faded burst forth once more in freshness and beauty; the streams break from the icy chains that held them, and the glorious sun himself comes wandering back from his far journey, giving summer and warmth, and fertility and magnificence, to every thing around. All this we see breathes of the same hope; every thing that we see rekindles into life.

Through the wide universe's boundless range  
 All that exist, decay, revive, and change,  
 No atom torpid or inactive lies.  
 A being once created never dies.  
 The waning moon, when quench'd in shades of night,  
 Renews her youth with all the charms of light;  
 The flowery beauties of the blooming year  
 Shrink from the shivering blast and disappear;  
 Yet, warm'd with quick'ning showers of genial rain,  
 Spring from their graves, and people all the plain.  
 As day the night, and night succeeds the day,  
 So death reanimates, so lives decay.  
 Like billows on the undulating main  
 The swelling fall, the falling swell again.  
 Thus on the tide of time inconstant roll  
 The dying body and the living soul.  
 In every animal inspir'd with breath  
 The flowers of life produce the seeds of death.  
 The seeds of death, though scatter'd in the tomb,  
 Spring with new vigour, vegetate, and bloom.

All that inhabit ocean, air, or earth,  
 From one eternal Sire derive their birth.  
 The hand that built the palace of the sky  
 Form'd the light wings that decorate a fly.  
 The Power that wheels the circling planets round,  
 Rears every infant floweret on the ground.  
 That Bounty which the mightiest beings share,  
 Feeds the least gnat that gilds the evening air.  
 Thus all the wild inhabitants of woods,  
 Children of air, and tenants of the floods,  
 All, all are equal, independent, free,—  
 And all are heirs of immortality.

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## THE FORM AND COMPARATIVE SIZE OF THE BLOOD-DISCS IN VARIOUS ANIMALS.

By RICHARD OWEN, *Esq.*, F.R.S., F.L.S., F.G.S., and *Hunterian  
Professor in the Royal College of Surgeons.*

IF the determination of the size and form of the red particles of the blood in different species of animals be a matter of interest to the general physiologist, it must still more nearly concern the veterinary surgeon, under whose immediate care and observation the diseases of so many of the mammiferous animals properly fall.

It may be superfluous to remark to your intelligent readers, that the red particles, improperly called "blood globules," are minute flattened plates, or discs, in all the four classes of vertebrated animals; that these discs have a circular form in all the mammalia in which they have been hitherto observed, with the exception of the dromedary and llama, where they are elliptical; that they have an elliptical form in birds and reptiles, and in the majority of fishes. The size of the blood-discs bears no proportion to the bulk of the animal: they are largest in the cold-blooded amphibia; and in this class their size appears to relate to the length of time during which the external gills are preserved. Thus the newt has larger blood-discs than the frog or toad, and preserves its external gills during a longer time; and the *proteus*, which never loses the external gills, has still larger blood-discs. In this animal, indeed, they are visible to the naked eye; but in other other species a microscope, and generally of a high power, is required to distinguish their form. The size of the blood-discs has been determined in the following animals to be in fractions of an inch:—

Proteus (long diameter)	. . . . .	$\frac{1}{387}$
Newt (ditto)	. . . . .	$\frac{1}{889}$
Frog (ditto)	. . . . .	$\frac{1}{1000}$
Tortoise (ditto)	. . . . .	$\frac{1}{1219}$
Common Fowl (ditto)	. . . . .	$\frac{1}{1681}$
Ox	. . . . .	$\frac{1}{4430}$
Man	. . . . .	$\frac{1}{3500}$

Having already received your valuable assistance in obtaining blood from your patients in the Zoological Gardens for pursuing this comparison, I beg to submit to you the results obtained from the following species:—

### ORDER,

- Pachydermata*.....Elephant (*Elephas Indicus*), male, nearly full grown.  
   Rhinoceros (*Rhinoceros Indicus*), male, full grown.  
*Ruminantia*.....Dromedary (*Camelus Dromedarius*), male, full grown.  
   Giraffe (*Camelopardalis Giraffa*), male, nearly full grown.  
*Edentata* .....Armadillo (*Dasypus 6-cinctus*), male, full grown.



The blood from the ELEPHANT was obtained from a small vein on the outside of the ear. The red particles presented the usual figure characteristic of the mammiferous class, viz. the circular flattened slightly biconcave disc: their size varied more than usual, but that of the greatest number exceeded by about one-fourth the average-sized human blood-disc, which I take for the present comparison at  $\frac{1}{3500}$  of an English inch. The largest blood-discs of the elephant were twice the size of the ordinary sized human blood-disc; the smallest equalled them in diameter: hence the blood-discs of the elephant are of a large size than those of any other mammiferous animal hitherto examined. I need, however, hardly observe, that this relation of the size of the blood-particles to the bulk of the individual is by no means constant in the mammalia; and that the discrepancy in this respect is still more remarkable in the lower classes. The action of the salt solution upon the blood-discs produced a slight diminution of their size, and the number of those which presented the concave or basin-shaped figure was greater than in the recent blood. A few of the minute chyle, or lymph particles, were present; but I could not distinguish in any of the portions of the blood examined that variety of form in the blood-discs which Prof. C. H. Schultze has described in the blood of an elephant killed at Potsdam by means of hydrocyanic acid, and which induces him to describe the blood of this mammiferous animal as containing in itself all the various forms of particles which characterize respectively the blood of insects, mollusks, fishes, reptiles, and mammals.

RHINOCEROS.—The blood of this animal was obtained by a small incision in the upper lip, and was consequently of a mixed arterial and venous nature. The huge creature being attracted by a favourite dainty presented to him by his keeper, seemed quite insensible to the operation, and quietly allowed the blood to be collected as it trickled down. The blood-discs presented the usual mammiferous form, and a less variety of size than in the elephant. The average diameter is not greater than that of the human blood-disc. The largest sized blood-discs of the rhinoceros have a diameter of  $\frac{1}{2800}$  of an inch: the smallest  $\frac{1}{4200}$ .

Among the accidental circumstances observed in the examination of the blood of the rhinoceros, I may mention that, although that portion spread on glass was dried under the same circumstances as the rest, a far greater number of the particles presented the granulated or mulberry character than in the blood of the other quadrupeds.

DROMEDARY.—In inspecting the blood of this animal, which

was obtained from a slight incision in the skin of the leg, I had the gratification of appreciating the accuracy of Dr. Manel's recent interesting discovery of the elliptical form of its blood-discs. These present fewer differences of size than in the rhinoceros, but among the elliptical particles there were a few which presented the circular form.

The long diameter of the average-sized elliptical discs was  $\frac{1}{4000}$  of an inch, the short diameter  $\frac{1}{7400}$ .

GIRAFFE.—The blood of this animal,—mixed arterial and venous,—was obtained from an incision in the integument of the face, and presented the particles of the circular form as in the ox and ordinary ruminants, and the mammiferous class generally. The average size of the particles was nearly one-third smaller than those of the human subject; the largest (which were very few in number) measured  $\frac{1}{4000}$ , the smallest  $\frac{1}{4800}$  of an inch; the average size was  $\frac{1}{4500}$ ,  $\frac{1}{4600}$ .

This result of the examination of the blood of the largest of the ruminating tribe is interesting, inasmuch as it indicates that the size of the blood-particles relates to the condition of the whole organization, rather than to the bulk of the species. It would appear from the examination of the blood-discs in the goat, sheep, and ox, that an unusually small size of the blood-disc was associated with the peculiarities of the ruminant structure.

ARMADILLO.—The blood-discs of this little quadruped rather exceed in size those of the rhinoceros; but the varieties in this respect have a more limited range; they present the usual mammiferous form. The average diameter is  $\frac{1}{3300}$ th of an English inch.

The blood-discs were examined as they floated in the serum; also in a portion of blood thinly spread and rapidly dried upon slips of glass; lastly, as preserved in a solution of common salt, of the strength of ordinary serum.

The observations were made by a Ross's Wollaston's doublet of  $\frac{1}{8}$  inch focus, with Dujardin's illuminator, belonging to the microscope in the Royal College of Surgeons, and repeated, by the kind permission of Dr. Arthur Farre, with the same power and illuminator in the excellent microscope lately completed by Mr. Ross for that gentleman.

Should this communication prove acceptable to your readers, I shall have much pleasure in communicating to you the results of future examinations.

A CASE OF NEURALGIA, OR RHEUMATISM, OR  
BOTH, CONTROLLED, IF NOT REMOVED, BY  
THE NUX VOMICA.

*By Mr. C. SNEWING, V.S., Rugby.*

A FINE cart (grey) gelding, aged five years, while at plough during the spring of 1838, was perceived to go slightly lame on the off hind leg, and which increasing, in a short time rendered him unable to work. Upon examination, an enlargement was found on the upper part of the right stifle joint, over which, at the suggestion of a farrier, a strong blister was applied, and repeated after the lapse of some few weeks. This second powerful repulsive step was followed by a sudden change of the pain and tumour to the opposite side; returning, however, at intervals to its pristine locality, or often involving both at the same time. In this state, expressive of highly acute suffering, he was permitted to drag on his existence through the following autumn and winter; its owner relying on the hope, that "a run at spring would bring him round again." Spring came, and with it "the climax of its ills" on this poor brute, his meagre frame bespeaking the wane of health and life.

Help was at length sought after, and, on the 27th of June last, I was sent for to give my opinion. I found him down, and, after making some three or four unsuccessful efforts, he rose, but this was followed by a loud groan, and three or four convulsive movements of the hind limbs, succeeded by a constant involuntary "catching up" of one or the other of them, particularly the off one. There also existed an extensive swelling immediately underneath the anterior projecting portion of the ileum on the near side. His countenance and restless frame bespoke intense suffering. The pulse, taken in some of his calmest moments, ranged from 140 to 150 per minute; it was powerful, and every vessel seemed filled to repletion. The breathing ranged from 60 to 70. No racer on the Derby ever evinced to the touch a greater firmness of muscle, and no greyhound, comparatively speaking, ever bore a deeper chest in proportion to his lank belly than this poor brute.

In progression, a sudden twitching motion of the hind limbs urged them forward without any perceptible flexion of the fetlock, and barely of the hock joints, and a short, jerking, extensile movement of the latter brought them to the ground. In lying down, he would first very naturally flex his fore limbs, and, when half down, a sudden and heavy fall completed the action, produc-



tive of a deep groan, and an aggravation of his pain. In a minute or so this would die away, and he would lie reposing at apparent ease for some time, accompanied by a lowering of the pulse of some ten or twenty beats per minute. His appetite was remarkably good, and the mastication quick and ravenous. Still, from the high degree of constitutional irritability present, and the length of time that had elapsed, I regarded the case as hopeless, and felt reluctant to prolong the poor brute's sufferings. The owner, however, urged me to try some experiment. At last, the full assurance that I could not aggravate his misery overcame my better feelings, and, marking the unusual fulness of the vascular system, the strong tone of the pulse, and unimpaired appetite, I bled from the jugular vein, to the amount of six quarts, in a full stream, which proved very difficult to arrest. I next proceeded to place a rowel in each thigh, and gave him drachm doses of opium every twelve hours, in combination with digitalis a scruple, Barb. aloes half a drachm, and gentian root two drachms. I also applied a strong blister extensively over the loins, and afterwards turpentine liniment. In a week there was an evident amendment; the system was more tranquil. I now substituted for the Barb. aloes half-drachm doses of the chloride of mercury, and continued the other treatment.

*July 10th.*—The amendment continues. The breathing is comparatively tranquil, and the pulse lowered to 110 beats per minute. There still remains the spasmodic action of the hind limbs, and inability to stand tranquil. Omit the digitalis, and add to the other medicine drachm doses each of the sulphate of iron and copper.

*14th.*—No very important change has taken place since the last report. Continue the medicine, substituting for the calomel half-drachm doses of Barbadoes aloes.

*19th.*—Decidedly worse; pain almost unbearable; perspiration profuse; pulse and breathing fearfully increased; urine, which all along has been high-coloured and voided at frequent intervals in small quantities, is now ejected more frequently, the bowels discharging a bloody sanious fluid. I now determined, as a *dernier resort*, to try the effects of the vomic nut in powder, and proceeded to give drachm doses of it in combination with the extract of belladonna ʒj, camph. ʒj, carb. ammon. ʒij, gent. p. ʒij, zingib. p. ʒj, every twelve hours, in the form of ball.

At the expiration of three days there appeared as if some magic had been wrought, for my patient was no longer the poor, helpless, dying brute he was some few days before. His pulse had fallen to somewhat under 100; the breathing was comparatively tranquil; the gait steady, and the bowels, which had been stimulated with chloride of soda, and afterwards with a solution of chloride of lime,

discharging good purulent matter. The urine also voided less frequently.

Continuing this treatment, at the expiration of three weeks I had gradually increased the dose of the vomic nut to two drachms twice a-day, when I withdrew the aid of the belladonna. I applied an extensive charge (cerate) over the loins and back, and, to the common pitch, turpentine, and resin, at your suggestion, I added half an ounce of the pulv. cantharides to a pound of the cerate, and covered the whole with some short flocks of wool. From that time to the present date, I continued giving the vomic nut twice a-day, at first in combination with carb. ammonia, camphor, and the vegetable tonics, ginger and gentian; afterwards, from a perusal of some neuralgic cases in the human subject, published in a medical journal, I was induced to combine with it the carbonate of iron, in doses of from  $\mathfrak{z}\text{ij}$  to  $\mathfrak{z}\text{iv}$ , and omit the carbonate of ammonia and camphor.

I pursued this treatment up to the latter end of last month, by which time I had increased the dose of the nut to three drachms twice a-day; and, my patient having so far recovered as to bear no evident traits of any disease (save a lankiness of form, and a continuance, though in a less degree, of that spasmodic action of one or other of the hind limbs, particularly the off, which, when raised, appears so straight and rigid as to lead one to imagine that it was shorter than its fellow, though it but little, or not at all, altered his natural action in walking or trotting), I now began to curtail my formula, and, relying on the tonic powers of the vomic nut, I omitted the other ingredients, and combined with each dose ten grains of powdered capsicum-berries.

This, then, up to the present hour, is the history of a case peculiar to me. It is a disease over which the vomic nut has had a marked controul—aided, probably, by the belladonna; and from the hour that I commenced giving it I date the gradual return of my patient from the precincts of death to health.

He now is apparently free from pain; the pulse and breathing natural; condition thriving; and all that remains of disease is the spasmodic action (which I have described) of the off hind leg.

While it affords me much pleasure to lay this case before the readers of your invaluable Journal, it encourages in my mind a hope that if you, or any of your readers, are aware of a medicinal agent likely to afford still farther relief in this once distressing case, by making the same known, it shall meet in my hands that consideration which I trust will convince its donor that I am not insensible to a kindness received.

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There is no drug, the veterinary records of which are so *maigré* as the nux vomica, and its essential principle, strychnia. Mr. Morton

relates, in his invaluable paper on Poisons, some experiments on its power in the horse. Two ounces of the powder of the nut destroyed a horse in a quarter of an hour. An ounce was given to another horse, and in seven hours every symptom of poisoning had disappeared.

Of the strychnia, or essential principle of the nut, the same gentleman—and to him we are indebted for much that is generally and advantageously known of the power of drugs on our patients—tells us that its influence is conjectured to be principally on the motor tract of the spinal cord, and that it restores the lost power of the muscular system: he adds that 15 grains of it were sufficient to destroy a horse. He acknowledges that he is indebted to Mr. E. Braby, and Mr. J. B. Simonds, for the history of cases of partial and general paralysis in the horse. These gentlemen would confer much obligation on their professional brethren if they would publish the records of those cases. He also says, that the Editor of this work recommends it for chorea in the dog.

If that Editor were to confess the truth, he would say that he has failed much oftener than he has succeeded. He has put on record the unsuccessful administration of it to two of the congeners of the dog, according to some zoologists—the jackal; and he has also acknowledged that in the only two cases in which he ventured to give this medicine in paralysis in cattle he failed. He lately gave the strychnia to a Capuchin monkey, of small size, that had suddenly almost lost the use of his hinder extremities. He began with a good purge of calomel and antimonial powder, and then ordered one-eighth of a grain of the strychnia morning and night. This was continued during a fortnight, when, the animal not improving, but the contrary, he increased the dose to one-sixth of a grain. There were none of those exacerbations, or tetanic spasms, which some have described; but the patient was becoming thinner and weaker every day. He, therefore, discontinued the medicine, and bounded his treatment to the making the poor animal as comfortable as he could while it lived. It died the day before this was written, and its body was sent to a friend, who has promised to give an account of the post-mortem appearances.

On August the 17th, 1839, the following entry occurs in the "Case Book." "Great-eared Owl:"—I have observed for several days past a somewhat peculiar appearance of the countenance of this bird. He has not looked fairly at me, and there was some uncertainty in his manner of taking his food. A person who was not looking out for evil would pass him a hundred times and see nothing amiss. I am now sure of what it is. It is gutta serena. The eye is as bright as ever, and follows the least noise, but not any motion without noise. I introduced a stick, slowly and cau-



tiously, and fairly touched his forehead before he moved. I never saw a case of this kind before in a bird. Try the effect of strychnia. The nerve affected does not proceed from the spinal cord, but still the strychnia may have some power over it. It is, at all events, a legitimate experiment. Give him one-eighth of a grain morning and night, in a bit of meat.

*September 2d.*—I do not see the slightest difference. Continue medicine.

*17th.*—No change. We will not give him up yet. Continue the medicine while he will bear it.

*25th.*—I do fancy that there is a little improvement. Give one-third of a grain of the strychnia morning and night.

*October 16th.*—He bears the strychnia well, and I do sometimes think is improving. Two-thirds of a grain in the course of a day—this is a fearful quantity, and yet I have not seen one of those exacerbations of which some of our French brethren speak.

*November 2d.*—Not much change. He strangely bears his medicine. We will try this case on to the very last, and the result shall be honestly recorded.

*October 3d.*—Another of our birds attracted my attention. It was a cassowary. It has not fed well—there has been a depressed look, and he now begins to step short and stagger as he goes. There is loss of power over the hind limbs. Give him four grains of calomel and two of emetic tartar.

*6th.*—The medicine has considerably purged him. Give him a quarter of a grain of the strychnia morning and night.

*10th.*—We shall certainly lose this bird. He is weak, and losing flesh sadly. Continue the medicine, and coax him with every kind of food.

*16th.*—His appetite is returned, and he eats every thing that is set before him, but, except in order to get his food, he can scarcely be induced to move. He has that peculiar gait which indicates loss of power from paralysis more than from debility.

*November 2d.*—There is no change, except that the rapid emaciation seems to be arrested.

One other case the Editor will refer to. A gentleman by whom he had been employed many a year while in the practice of his profession, called on him with an old and favourite Italian greyhound that was becoming evidently and rapidly paralytic. Being restricted from giving advice within a certain distance of the metropolis, he refused, although pressed hard, to give any opinion. In the evening the gentleman returned, and, after much entreaty, prevailed on him to prescribe. He recommended that one-fourth of a grain of the strychnia should be given, and repeated occasionally

if it agreed with the dog. *The honorarium was, of course, peremptorily refused*, and the affair was placed to the score of the remembrance of old kindness. The dog died within a quarter of an hour after he took the first dose. The owner felt exceedingly aggrieved, for he was told by druggists and human practitioners who knew nothing about the matter, and also by others who knew better, that it was an outrageous dose—his former partner, hearing of the matter, refused to continue the annuity on the consideration of which he retired, and he has been compelled to return to the practice of his profession. The experiments which he is now making on the power of the strychnia, in the cases which are here recorded, assure him that he was not guilty of the very bad practice attributed to him; and, if fewer of the hours that remain to him will be spent in the quietude which he expected, his zeal in the cause to which he has devoted himself will not abate while he has life.

Our continental neighbours have instituted many experiments on the power of strychnia, as a poison; but they say little of it as a medicament. Professor Moiroud, whose *Materia Medica* is of the highest authority, thus speaks of it:—"The *nux vomica* is one of the most powerful modifiers of the animal economy. A weak dose of it will produce on all animals the most remarkable disturbance, differing in different animals, but in all distinguished by the same characteristic phenomena, and not permitting us to mistake them. The influence of this poison is first recognized by the following symptoms: slight contractions of many or all the muscles of voluntary action, and which gradually increase in intensity. To these succeed spasmodic movements of the toes—incessant motion of the feet, followed by spasmodic stiffness of the trunk and limbs—tetanus—a circular rolling of the eye—dilatation of the pupils—extreme irritability, so that the animal starts at the least noise or touch—the respiration laborious and accelerated—at intervals, some moments of intermission, presently followed by new exacerbations. Finally, there supervenes a tetanic rigidity, every moment increasing, until the parietes of the thorax become immoveable, respiration ceases, and the animal dies of suffocation."

"The *nux vomica* is an excitant of the nervous system, and principally of the spinal cord, producing violent and prolonged spasm of the muscles of the thorax, both external and internal, and a consequent inability to perform the function of inspiration."

As a therapeutic agent, the *nux vomica* has been long employed in a manner altogether empirical, and principally as a remedy for farcy and glanders. Many farriers secretly employ it in the treatment of these diseases. They usually begin with one nut, rasped to a fine powder, and gradually increase the dose by odd

numbers until it reaches 7 or 9. It is superfluous to add, that such a mode of treatment could never be attended by satisfactory results, and, consequently, when the practice of the veterinary art began to be conducted on scientific principles, the administration of this drug was generally abandoned. Of late years, however, new experiments have proved that its influence is exerted chiefly or solely on the nervous system, and it has consequently been employed in the treatment of paralysis. The result has proved that it is useful in affections of this kind. Theory, however, would lead us to believe that it is not applicable to every species of palsy, and that it would be useless, or perhaps dangerous, in those cases in which the affection assumes an inflammatory character, or where there is reason to suspect *ramollissement* of the cerebral substance or of the spinal cord, for it would only augment the lesions which it was intended to remove or abate."

Lebas, who calls himself a veterinary pharmacien, and who has published a large work on veterinary pharmacy, but whose authority is inferior to that of Moiroud, says that "Experiments on the medicinal properties of the nux vomica, with respect to our domesticated animals, have not been brought to any satisfactory conclusion. It, however, possesses an anthelmintic property, and its prolonged usage in minute quantities stimulates the stomach, and increases the appetite of the horse."

We should put just as much confidence in this as in the opinion of a great many of our own compounders and manufacturers of drugs.

It will not be displeasing to our readers to be made acquainted with the result of the use of the nux vomica in the principal French school, and among French practitioners, for the cure of palsy. We quote from the recently published edition of Hurtlel D'Arboval's Dictionary.

M. Barthélemy, then professor of the Veterinary School at Alfort, experimented on a yard-dog, that had, during eight days, been affected with complete palsy of the left fore leg. This had been preceded during four months by convulsive motions of that limb, resembling those produced by chorea. After having continued the exhibition of the nux vomica during more than six weeks without any remission of the symptoms, he considered the disease as incurable, and destroyed the sufferer. On examining the carcass, he found that a scirrhus tumour, formed by the enlarged lymphatic ganglions at the entrance into the chest, pressed upon the left brachial vessels and nerves. A cure was, therefore, out of the question here. Another yard dog, eighteen months old, and that had been ill about twelve days, had his head inclined to the left, and his neck bent to such a degree, that his left ear and part of the occipital bone lay upon the shoulder of the same side. His ap-



petite was good, but he could neither lift nor stand upon his fore legs, and every time that he attempted to do so, being petulant and passionate, he abandoned himself to the strangest and most violent struggles, and rolled over twenty times before he abandoned the useless effort.

This dog remained nearly two months in the hospital of the school. Four grains of the powdered *nux vomica*, and gradually increased to ten, suspended in water, were given to him every day, except that the medicine was omitted for one or two days when he seemed to be too much fatigued by the effects of it, for the administration of the drug was sometimes followed by a decided tetanic paroxysm.

At the expiration of eight days the head began to return to its natural position and direction. A few days after this, the animal began to support himself a little on his fore legs, and, soon afterwards, he could get up without assistance, and remain standing for a considerable time, if he rested his left side against some object. He next began to walk a little, but in a very irregular way, and he often seemed to be compelled to take a direction contrary to that which he intended, and to be utterly unable to stop himself when he wished, until at length, he dropped on his left side. He continued rapidly to improve, and at the expiration of twenty-eight days he seemed to be nearly cured. Soon afterwards, however, every bad symptom having reappeared, he was submitted anew to the former course of treatment; and, when the *Compte Rendu* of the school was drawn up, the animal was rapidly improving, and there was reason to hope that a cure might be effected.

In a third case, a dog had for many days been afflicted with general palsy. He was in good condition, ate with his usual appetite, saw and heard as well as ever, but could not move a single limb. He was put under a course of the *nux vomica* for six weeks, the quantity being gradually increased from four to twenty grains daily, leaving him also an interval of two days of repose when it appeared to be necessary. At the expiration of two months, some slight convulsive contractions began to be remarked, and, a few days afterwards, the animal could execute some slight movements. At length he was able to lift his fore paws, and, after that, his hind ones. At the expiration of another day or two, he could walk, but in a very irregular and precipitate way, and falling every instant. These muscular efforts became more free, more regular, more certain, and at the expiration of two months and a half from the commencement of the treatment, the dog was perfectly cured.

To this follows a successful case of the administration of strychnia to a working ox, by M. Taiche. It will be found in the ninth volume of *THE VETERINARIAN*, p. 75.

And thus ends the history of the experience of our French

brethren. The field is open to us all. We entreat the communication of the experience of our brethren, and shall anxiously await the arrival of another communication from Mr. Snewing on the effect of the *nux vomica* in vertigo.—Y.]

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## CASE OF VOMITING IN A MARE.

*By J. TOMBS, Esq., V.S., Pershore.*

October 15, 1838.—A BAY mare belonging to a medical gentleman of this town, when on a journey, suddenly cringed herself up, and vomited a gallon of indigested food and saliva. She vomited three or four times in the course of her journey. Soon after she came home I saw her. She was tucked up—her coat stood on end; the pulse was 50, and weak; an astonishing quantity of saliva continually dropped from her mouth, and there was disinclination to feed. Give aperients.

16th.—Still a copious flow of saliva from the mouth. She refuses food and water, and has been slightly sick since yesterday. On examining the mouth I discovered an oat imbedded in the lining membrane of the upper lip. I removed it, and had a solution of alumina applied to the orifice. The secretion of saliva gradually lessened, and in a week she was quite well.

Farmers' horses when eating barley-chaff frequently slaver, and have a fœtid discharge from the mouth, in consequence of the chaff getting under the root of the tongue, and forming ulcers. The removal of these foreign substances and an astringent lotion soon effects a cure.

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In your answer to Correspondents, will you kindly inform me if veterinary surgeons are liable to fill any petty parochial offices—such as constable, overseer, collector of taxes—if appointed to the same?—or whether they are liable to be subpœnaed as jurymen at assizes or quarter sessions?

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[They are so, although they plainly ought to be placed on the same footing as the medical man. Their patients are not so valuable, but they are engaged, like the medical man, in the relief of pain and the prolongation of life.

A petition numerously signed, and presented to the House of Commons, might, probably, cause us to be relieved from this hardship. The Editor of this Journal is at the service of his brethren.—Y.]

## TWO CASES OF STOMACH STAGGERS, SOMETIMES CALLED DYSENTERY.

*By Mr. T. W. ROGERSON, V. S., Bedford.*

CASE I.—On the 27th of January I was requested to attend a bullock that had been taken ill during the night. About 6 A.M. the animal was found staggering about the yard, unconscious of what he was doing—his eyes fixed steadfastly, and exhibiting a partial paralysis. His owner had him removed into a warm hovel, and bled him to the amount of four quarts. On my arrival, at 8 A.M., he was lying down, and totally unable to rise, even with the assistance of three men. There was complete paralysis of the hind extremities, so that I had but little hope of a favourable termination.

I first inquired into the cause, or supposed cause, of this malady, and obtained what I think is a very satisfactory account of it. He was, with some others, two days before, removed from the straw yard, and put to bean and wheat flour; which, no doubt, formed into a mass in the first stomach, and rendered rumination impossible. I therefore had recourse to that valuable instrument the stomach-pump, which I succeeded in passing very easily, the beast still lying down, and unable to rise. I injected six ounces of the solution of Barbadoes aloes, one pint of linseed oil, and half a drachm of croton, with a sufficient quantity of the liquor potassæ to unite the aloetic solution with the oil. Having done this, I injected a pail of warm water, when the animal exhibited symptoms of vomiting. I then withdrew my tube, back-raked, administered enemas, and tried again to move him, but in vain.

In the space of two hours I again visited my patient, and on patting his back he rose, stretched himself, and commenced purging most violently, so much so, and continuing so long, that I was induced to administer a mild astringent in some gruel. A short time afterwards he began to eat a little hay. I ordered bran mash, gruel, chilled water, &c.

28th, 10 A.M.—Much better, although rather weak—the eyes having their natural appearance—the fæces much firmer: he had eaten some mash and hay, and had ruminated during the morning. Give of sulph. mag.  $\mathfrak{z}$ iv, sulph. lev.  $\mathfrak{z}$ iv, zingib.  $\mathfrak{z}$ ij, in a quart of warm milk and water, with mash, &c. as before.

29th, P.M.—Quite recovered; fæces healthy; no debility; eats and drinks well.

CASE II.—*February 28th, 1839.*—I was sent for in haste to attend a bullock which the lad said had been falling about the



yard several times, with his eyes turned up into their sockets, and it was feared he would die before I could arrive. I suspected what was the matter, and accordingly went prepared to meet the enemy.

I found it to be a decided case of stomach staggers. The beast was reeling about the yard, unconscious of surrounding objects;—occasionally drawing his hind quarters after him for some distance, and then falling into a state of stupor—moaning, and making efforts to void some fæces, but without effect, as the rectum had protruded at least two inches, and the sphincter ani had become so contracted around the prolapsed intestine as to make it almost impracticable to introduce my hand. I, however, did introduce it, and, to my surprise, found not a particle of fæculent matter.

I now inquired into the supposed cause, which, like the last, I found perfectly satisfactory. This was one of a lot of lean Hereford beasts which the gentleman had bought a few days previously and put to barley straw, where he had overcharged his digestive organs, and impeded the functions of the rumen. I therefore had recourse to the stomach-pump (which no veterinary surgeon who practises among the ruminants ought to be one hour without), and injected a pail of warm water into the rumen, and then, reversing the key, pumped up a great quantity of food, consisting of the smaller particles of the straw. After this I administered sulph. mag.  $\mathfrak{z}$  viij, and sulph. lev.  $\mathfrak{z}$  iv, in a quart of warm milk and water. I then withdrew my tube from the mouth, and administered enemas, which were as rapidly expelled, without being in the least discoloured with fæces.

I now tried, with the assistance of some of the men, to get him up, but in vain: he raised his head occasionally to his left side, as if in pain, and his extremities had assumed a death-like coldness. The muzzle was dry and cold, and he moaned frequently.

On staying with him, which I did for some time, I found that his left flank was at intervals tympanitic, but not to any extent; the enlargement would then subside, and he would have the appearance of a fatted bullock. I gave a pint of castor oil, but still that side became inflated, and again subsided. I therefore resolved, if it reappeared, to introduce the trocar. I did so, and it had the desired effect: a great portion of gas as well as straw soon escaped from the tube, and the beast in a few seconds rose voluntarily, and, walking round the yard, shortly afterwards began to void his fæces in a liquid form. Having closed the orifice with a little common pitch and tow, I ordered mashes and some gruel, and desired that the beast might be put into a warm hovel.

*March 1st, A.M.*—All symptoms of drowsiness had subsided, and he had voided fæces during the night, but was rather inclined

to constipation. I therefore gave sulph. mag.  $\mathfrak{z}$ iv, sulph. lev.  $\mathfrak{z}$ ij, zingib.  $\mathfrak{z}$ j, in two quarts of warm milk and water. The diet was ordered to be mashes and gruel.

*March 2d.*—Quite recovered, except a little debility, which lasted a few days. I ordered a small quantity of good hay, and that the beast should be fed moderately.

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## A CASE OF FATAL METASTASIS OF INFLAMMATION IN A COLT.

*By Mr. W. W. BADDELEY, Hanley, Staffordshire.*

BEING a constant reader of your valuable periodical, I feel it an imperative duty to contribute my mite towards that fund of veterinary knowledge with which your publication uniformly abounds. The following is a statement of a singular and provoking case.

On the 8th of August, 1837, at 3 P.M., I was requested to attend on a black colt, three years old, the property of Mr. P——, of this town. The following were the symptoms exhibited: He walked with his hind legs very much under him; the fore feet were very hot; the pulse was 60 per minute, and the pulsation of the plantar arteries was peculiarly strong; the respiration was also quickened, and the bowels a little constipated. I at once declared it to be a case of inflammation of both fore feet, and on inquiry I heard that he had been a long journey on the previous day, and had been bled this morning to the amount of four quarts. I had his shoes taken off, which was accomplished with difficulty, and I bled him at both heels. The feet were well pared, and rasped quite thin, and placed in warm water, in order to encourage the bleeding. We obtained at least four pounds of blood from the feet. I then applied poultices to the feet, and ordered them to be kept wet with a cold lotion. I administered internally three drachms of Barbadoes aloes, half an ounce of nitrate of potash, and a drachm of tartarized antimony.

*8th, P.M.*—He is no better. He is lying down—his feet are still hot—the pulse is 62, and hard, and the respiration is the same as before. I got him up, and bled him to the amount of ten pounds; after which I plunged my lancet again into both heels. Two drachms of Barbadoes aloes, an ounce of nitre, two drachms of tartarized antimony, and a drachm of powdered digitalis, were divided into two parcels, one to be given immediately, and the other quite early in the morning. Clysters were administered; the poultices were continued; plenty of warm water was placed within his reach, and he had nothing but mashes to eat.

9th, 10 A. M.—Better. The pulse is still quick, but the pulsation at the plantar arteries is not so strong. The breathing is somewhat quieter, and the bowels have been slightly acted upon. Continue the powder, with the exception of the aloes.

3 P. M.—I visited my patient with the hope of finding still greater improvement, but to my surprise and regret I found him rolling in his stall—*looking anxiously at his flanks*—the breathing quickened—the pulse 80—the feet cool, and the peculiar throbbing of the plantar artery no longer to be felt. The horse was completely covered with cold perspiration. I anxiously inquired of the groom what had been given to the horse. He informed me that our patient had drank a pailful of warm water, and eaten a handful of vetches. It was a clear case of metastasis of inflammation from the feet to the bowels.

I immediately ordered some well-boiled gruel, and bled him to the amount of four pounds. The pulse then began to falter, and I pinned up the wound. I administered opiates, with plenty of clysters and fomentations. Stimulants were also applied externally to the abdomen, but all without effect. He died on the following morning, between five and six o'clock.

*Post-mortem examination.*—The feet were as free from disease as if nothing had been the matter with them: but both the peritoneal and mucous coats of the intestines were in the highest state of inflammation.

Were the vetches acting with the cold lotion the cause of this fatal metastasis? or would it have occurred if they had not been given?

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[The cold lotion could have had nothing to do with this fatal metastasis. It was applied to the immediate neighbourhood of the tissue originally inflamed, and it was doing its duty. The inflammation was gradually subsiding. The vetches did all the mischief. There was, in consequence of the high state of inflammation in the system, general and excessive irritability, and the intestinal canal had more than its fair share of it. It had been kept under by the stimulus of several successive small doses of aloes. It was ready to rebel against every kind of improper treatment. There seems also to be a morbid principle not sufficiently regarded in the horse, and in other animals, that, when an inflammatory disease is beginning to decline, as it was here, in the part originally affected, it is, as it were, eagerly looking round for some other weak point on which to discharge its remaining, or, perhaps, redoubled fury. Here irritation from the physic, and very properly administered, was produced; and then comes



the green meat, and, as it has done in such cases a hundred times, destroys the horse.

Mr. Baddeley is altogether free from blame; and the blame which attaches to the groom is, that he ought to have consulted the medical attendant, before he gave a single thing that was not positively ordered. This is a reform in the management of many a stable which is sadly wanted.—Y.]

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## CURSORY REMARKS ON THE IODURETS OF MERCURY.

*By* HUGH FERGUSON, *Esq., Dublin.*

*To the Editor of "The Veterinarian."*

Sir,—HAVING read a communication contained in the last number of THE VETERINARIAN, "On the Efficacy of Iodine and Mercurial Ointment in the Removal of Abnormal Growths," I am induced to make the following few brief observations.

When it is desirable to have the combined effects of iodine and mercury in any single preparation it is better to use them in chemical than in mechanical combination. For this purpose recourse may be had to either the proto, or the deuto, ioduret of mercury, the selection being governed by the required intensity of the stimulus, the latter being much more energetic in its action than the former. They are both powerful stimuli to absorption, whether they are exhibited internally or applied to the external surface. In the latter case, when the quantity is sufficient, an escharotic effect is the result. I am not, at present, aware of any other medicament the action of which is any thing like so great on the absorbent system; whether it be in cases of glandular, bursal, ossific, or, indeed, any other enlargement. As an external application, the form of an ointment is, for the generality of cases, the most judicious.

R Proto, or deuto, ioduret of mercury, twenty grains  
Lard, two ounces  
Mix.

In the above formula their action is extremely mild. Its intensity can, however, be increased by augmenting the quantity of the ioduret. I frequently use as much as half a drachm of the deuto-ioduret with an ounce of lard; and sometimes even more in cases of bony and bursal enlargement, and all other tumours which time has rendered indolent and, in some instances, indurated. In such

a quantity, the effects produced by the ointment resemble, in some degree, those of a mild blister. It is a good plan to use the strong preparation first, and then follow up the treatment by frequently applying the milder one afterwards. The latter is excellent as a stimulant for indolent ulcers, and in such cases a few drops of oil of bergami may be added. Internally administered, the iodurets of mercury seem to have a powerful effect in changing the action of the system when affected by an animal virus—that of rabies canina, stings, and venomous bites excepted. They have been found eminently serviceable in syphilis; and, to my own knowledge, have eradicated the baneful effects resulting from inoculation of the human subject with the matter of farcy and glanders. Their internal exhibition to our domestic mammalia in a state of health, and when affected by different diseases, will be discussed at some future, and no very distant, period.

The following is the mode of obtaining

*Ioduret of Mercury.*

R Crystallized proto-nitrate of mercury, one hundred parts,  
Water, four hundred parts.

Dissolve, filter, and add ioduret of potassium dissolved in water that has been acidulated with nitric acid, until a precipitate ceases to be formed. Collect this on a filter; wash it with distilled water until a black precipitate ceases to be produced by the addition of potass to the water; then dry and preserve it in a well-stoppered bottle, keeping it from the light.

*Deuto-Ioduret of Mercury.*

R Deuto-chloruret of mercury, seventy parts  
Ioduret of potassium, one hundred parts.

Add as much distilled water to each as will cause its solution; filter the two liquors, and then let them be *slowly* mixed together. Collect the precipitate on a filter, then wash it with distilled water until this comes off tasteless; after which dry and pulverize it. This being done, keep it in a dry place, preserving it from the light and air.—Or,

R Solution of hydriodate of potass, in any quantity  
add to it, drop by drop,

Solution of deuto-chloride of mercury,  
until it ceases to add to the precipitate; which wash, dry, put into an air-tight bottle, and keep from the action of light.

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## THE VETERINARIAN, DECEMBER 1, 1839.

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*Ne quid falsi dicere audeat, ne quid veri non audeat.*—CICERO.

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### THE COMMENCEMENT OF THE SESSION 1839-40, AT THE ROYAL VETERINARY COLLEGE, ON MONDAY, NOVEMBER THE 18th.

PROFESSOR SEWELL, whose health has materially improved, entered the theatre, accompanied by several friends, about 12 o'clock, and was received with loud acclamation. He said, that, in consequence of the decease of Mr. Coleman, the high distinction of filling the chair which that gentleman had so long occupied had been conferred upon him. He feared, when he considered the high state of improvement to which the profession had arrived, that he should somewhat unworthily discharge the onerous duties to which he was called. He had, however, for more than forty years enjoyed the advantage of being associated with the former professor, and he must have been inattentive indeed if he had not, in some degree, profited by the opportunities which he had possessed. It might be supposed that it was with feelings of a very serious character that he assumed the chief direction of an institution like that over which he was called to preside. He would, however, endeavour sedulously to discharge his duty, and then he knew that he should have the good wishes and the support of every honest mind.

In one respect, and a very important one, his situation would be different from that of his predecessor. The instruction of the pupil would now extend to other domesticated animals beside the horse. Preparation had been made for receiving them as patients, and he trusted that, in process of time, all the arrangements would be completed, and become alike advantageous to the institution, the pupil, and the agricultural body.

The early history of medicine, whether human or veterinary, was involved in considerable obscurity. A brief sketch of it might not be unpleasing, and might enable the student better to judge of what it was and what it is at the present day. In the infant state of society the riches of the patriarchs were calculated by the number of their



flocks and herds. Kings and princes were shepherds. We constantly read of cattle and sheep and camels and asses. The horse is spoken of as existing in Egypt, although principally used in the chase, or for the purposes of war. These animals must then, as now, be subject to disease; and it is impossible to doubt that various means were studied and known, by which the maladies of these horses, so valuable to the owners, might be cured, and their lives prolonged. The Chinese claim the possession of much valuable knowledge respecting the treatment of human and brute disease, more than 4900 years ago, or within a century after the creation of the world according to our calculation. Some of these works are said to be now extant, and to be regarded, and to be considered, as of undoubted authority. He recollected a Chinese work—describing supposed ancient practice—to have been shewn to him by one of the professors in Paris; but his attention was then directed to more important objects, and he did not take much trouble in examining it.

In another country vying with China in antiquity—Egypt, with its pyramids and catacombs, its aqueducts and its temples—the labour which was bestowed on these noble remains of art was chiefly exacted from inferior animals and from slaves; but we read of the horses and the chariots of Egypt, most numerous and valuable. The preservation of the health of these animals would not be neglected. Medicine was there cultivated as a science, and that many a century before the history of Greece had begun, or Athens or Rome were thought of. The horsemen of Egypt and the herdsmen or shepherds are particularly spoken of. The horses were particularly valued for the chase and for war; and humanity and attention to the comfort and the wants of every quadruped formed an important article in all the most ancient laws. The deities of those times were supposed to have taken upon themselves, occasionally, the forms of some of the domesticated animals. The dog and the bull were particularly revered on that account, and this would go far to secure every kindness and attention to them, and medical care among the rest.

By-and-by, Greece began to be peopled, and its inhabitants, by degrees, were civilized. 1200 years before Christ, Chiron lived,

who, from his management and love of the horse, was poetically said to be half a man and half a horse. He practised also the medical art; but we may be sure that his favourite animal would not be neglected. Homer, 300 years afterwards, describes the management of the horse by the Trojans and the Greeks. Six centuries posterior to this period, Hippocrates, the physician, wrote on animal as well as human medicine; and, at the same period, Xenophon, the warrior and the historian, composed his admirable treatise on the training and general management of the horse. Veterinary science might now be said to be triumphantly established, and was cultivated by philosophers, statesmen, and agriculturists.

The Romans next assumed a prominent station, and the veterinary art was studied and brought to a great degree of perfection. Cato, the censor, practised agriculture, and taught the general treatment of the diseases of horses and cattle. Virgil, the poet and the veterinarian, was attached to our art; and a great portion of one of his *Georgics* is, in a manner, devoted to the consideration of the diseases of the domesticated animals. In the stables of the Emperor Augustus he practised what he taught in his beautiful poems. He is particularly happy in his meteorological observations. This is a science intimately connected with animal as well as human medicine. The influence of the atmosphere on both cannot for a moment be denied; but it has been too much neglected in modern times. May the Meteorological Society which is now established recal the attention of philosophers and medical practitioners to this interesting and important subject!

Shortly after him arose Columella; and then, with an interval of more than 300 years, appeared the classic work of Vegetius, comprising all that was valuable in the state of the art at that time, and all that had been written or collected by former authors. That library is imperfect in which this work has not a place. Several veterinary surgeons had, a little before this, in the time of Constantine, united to compose a collection of useful treatises on the management and diseases of the horse; but the splendid work of Vegetius comprised that which was valuable in them all.

A long period of ignorance and of barbarism succeeded, and,

with the other arts and sciences, that which was connected with the medical treatment of horses and cattle disappeared. A thousand years passed on, and every record that was interesting or valuable relating to this subject seemed to have perished.

It was not until the sixteenth century that knowledge began to revive in Europe; but while considerable progress was made in several other branches of science and literature, the medical art, both human and veterinary, seemed to be utterly neglected. The seventeenth century had dawned ere the practice of human medicine was placed on its proper footing; and it is impossible to say how long our branch of the healing art would have continued in the degraded state to which it had sunk, if an epidemic, commencing among cattle and extending to the horse, had not laid waste every country of Europe.

It was bidding defiance to all the means that were employed to arrest its progress, when at length it was proposed that, in order to be enabled more successfully to combat the evil, a school should be established, under the guidance of those who seemed to know most about the matter, for the instruction of educated young men in the study of the anatomy and diseases of the different species of domesticated animals. A seminary of this kind was established at Lyons, in 1761, under the direction of the celebrated Bourgelat. The veterinary science and zeal of the Professor were well known; and his works, and particularly those on the anatomy of the horse, cattle, and sheep, were in high repute. Four years afterwards, another school, and intended to be the principal one in France, was instituted at Alfort, near Paris.

At the conclusion of the late war, in 1815, he visited these schools; he was kindly received by them, and derived much interesting information on the particular subjects which were the objects of his inquiries. He was presented with some valuable works by the professors, and some patterns of shoes for healthy and diseased feet.

Another school has since that period been opened at Toulouse. The horse was not neglected there, but the chief attention of the student was directed to cattle, which were most numerous and more employed in that part of the country. The professor of that



school, M. Gellé, is now publishing a very comprehensive and useful work on the maladies of cattle.

Other continental states were not slow in following the example of the French; and in the course of a few years, at Vienna, Copenhagen, Dresden, Berlin, Munich, Warsaw, Madrid, in fact, in almost every European state of any consequence, a veterinary school was established; and the gratifying result was, that these epidemics, if they did not altogether cease, were disarmed of much of their fatal character. They have never since re-assumed the malignity by which they used to be distinguished. The chief of these schools he visited in 1816.

Last year a school for the education of shepherds was established in Austria. While these schools were multiplying in various parts of the continent, one was established at Hanover in the reign of George III.

These institutions continuing to flourish in so many of the continental states, it was extraordinary that in Great Britain, the nursery of the finest horses and cattle and sheep in the world, no institution of the kind existed. Several reflecting and influential men regarded this as a national disgrace. Some of them, among whom were Mr. Granville Penn, Arthur Young, &c., zealously exerted themselves to establish a national school of this kind. They were joined by the Odiham Agricultural Society, which had determined to send two young men to France in order to study under the Professors there. Many noblemen, and influential men of science, and the leading men of the medical body, united in the accomplishment of this noble object, and the institution in which we are now assembled had its origin.

The first Professor, whose name was Sainbel, was necessarily a foreigner. He had distinguished himself at the French schools, and readily undertook the establishment of the institution that was contemplated in England. M. Sainbel, however, did not long retain this honourable situation. He closed his career in 1794, after a sudden and short illness, and Messrs. Coleman and Moorcroft were appointed to succeed him. In a short time Mr. Moorcroft retired, and devoted himself to the private practice which he had previously established in the metropolis. After this he ac-

cepted an appointment in the East India Company's service, and went abroad, and conducted, in a way most honourable to himself, and advantageous to them, some of the studs of horses in that country. Mr. Coleman remained at the College, and superintended the instruction delivered at the institution, very nearly forty-five years.

Many hundreds of pupils have been educated in this seminary, and have been scattered over every part of the British dominions at home and abroad. A great many of them, engaging in private practice, have done much to establish in the country a favourable opinion of the profession. Some have been appointed to situations of considerable magnitude and confidence, while others have been commissioned officers in the British cavalry, the East India Company's service, and in all our dependencies. While the veterinary science has, by these means, been much extended, it is highly gratifying to witness the spirit of humanity which is pervading the whole profession. The inhabitants of Britain are relinquishing the cruelties of their early progenitors, who used to fire their horses as well as themselves, and which is still practised in half-civilized countries. Firing is still practised in many parts of England, particularly in the north; but he was happy to say that it is rapidly decreasing. He did not say that it was a barbarous practice when applied in cases which plainly and palpably indicated its necessity; but the misapplication of it is less frequent, though he is certain it is much misapplied in a great majority of cases, aggravating instead of curing diseases which milder treatment would have subdued.

Many improvements have been introduced into veterinary practice since this school was established. Mr. Dean, late of Windsor, was the first who performed the operation of œsophagotomy.

Then followed tracheotomy—subcutaneous periosteotomy—neurotomy—the division of the flexor tendons of the leg—the tapping in hydrothorax—the extraction of vesicular calculi—and the cure for glanders; these shew the advance and the triumph of the veterinary art.

The Professor here produced some splendid specimens of knuckling at the pastern joint, and alluded to a case in a young gentleman which had come under his notice, and in which the cure was

complete. He likewise exhibited the septum narium of a glandered mare, in which the ulceration had proceeded to an almost incredible extent; but the animal had been cured, and had lived and worked fourteen years afterwards. He spoke also of the great and satisfactory degree in which farcy was now brought under medical control.

He then referred to the different modes of shoeing the horse, and produced specimens of shoes of every country. He noticed particularly Mr. Bracy Clark's jointed shoe as a supposed remedy for or preventive of contraction. It had been recommended by Blundeville many a year ago. It never got into general use, or answered all the purposes contemplated by Mr. Clark, although it was occasionally serviceable in cases of contraction and other diseases.

He next adverted to the various other kinds of shoes adopted in different countries, and produced specimens of them, from the shoe which in Iceland is sometimes constructed of the horn of the sheep, to the perfect covering which is afforded to the foot by the Arabian shoe, and which, in his opinion, approached as nearly as possible to perfection.

The last shoe adopted in this country was Mr. Turner's unilateral, or one-side-nailed shoe, and most successfully has it been employed in many cases of contraction and corn; but it did not appear to be adapted for general use.

He would now in a cursory manner allude to some of our English writers, and he was proud that we could produce so long and satisfactory a list. "The work of Mr. Wilkinson," said he, "was particularly valuable, on account of the extensive list of cures of that dreadful disease, tetanus, which it recorded. Mr. Percivall is, indeed, a writer of whom we may well be proud. His lectures contain a mass of important instruction, and his Hippo-Pathology is highly esteemed by every reader. I trust that the valuable labours of this author will be continued. Mr. Richard Lawrence has given some useful illustrations of the proper form and structure of the horse, as well as of the nature and treatment of many of his diseases. Mr. Bracy Clark, in addition to his works on the foot, has ably illustrated several of the diseases of the horse. Mr. John



Lawrence, although not a regular veterinarian, has given some very interesting accounts of the diseases and proper and humane treatment of the horse and cattle. Mr. Darvill has particularly considered the management and general treatment of the race-horse. Mr. Stewart, of Glasgow, is a laborious and useful writer." Among those who were present to-day he would mention Mr. Turner, who is now laying us under additional obligation by his physiological dissertations and discoveries. Mr. W. C. Spooner, of Southampton, has written a valuable work on a late epidemic complaint in the horse; and Mr. Youatt has a strong claim on the gratitude of the veterinary world, not only on account of the volumes which he has devoted to the elucidation of the general management and medical treatment of several of our domestic quadrupeds, but the ability with which he has conducted our useful Periodical. If he continues to edit it with candour and right feeling, it will ever be estimated as it deserves. Two or three or more rival works of a similar class had been attempted, but the spirit of most of them had been bad, and they had passed away and are no more heard of. They were poisoned by their own venom.

Some of the works which have been foisted on the veterinary public are little more than copies from human anatomy and physiology. The descriptions which have been given of the gall-bladder of the horse and the circulation of the descending aorta are sufficient illustrations of this.

Among our veterinary teachers we can enumerate several who are an honour to ourselves, and would be so to every profession. It will be sufficient to mention the names of Peall, Dick, Stewart, and Youatt. Others have distinguished themselves, and supported the honour of our profession in the scientific societies of their neighbourhood. The names of W. C. Spooner, Karkeek, and Gabriel, immediately occur to our recollection.

Many deserve the cordial thanks of the profession for the invention or improvement of surgical instruments, or the apparatus by which the horse may be secured when undergoing some necessary operations. The flexible catheter is an invaluable means of exploring the cavity of the bladder, or facilitating the operation of lithotomy. This instrument is yet peculiar to our country. Mr.

Mavor's apparatus for the local application of steam will be found exceedingly useful. Some improvements have been made on the trevis, both by Mr. Mavor and Mr. Skelton. To Mr. Gloag and Mr. Daws we owe a safer and more effective application of the casting hobbles.

"And now, gentlemen," said he, "we are commencing a new and very important session. Permit me to say, that those of you who are new to the profession should pay the closest attention to the study of anatomy. You will have every opportunity for it. Mr. Spooner will superintend your dissections; Mr. Barthe, whose duties will more especially lie in the dissecting-room, will always be ready to assist. Here you must begin. This will constitute the only sure foundation of future knowledge and successful practice.

"To those who have been accustomed to veterinary practice under their parents or masters the diligent study of anatomy is quite as indispensable: it will rectify many an erroneous notion which they had formed, and brought with them to the College; and it will most usefully confirm the right notions which they had entertained of certain parts and certain modes of practice.

"Our instruction and your practice will extend to all domesticated animals. We are all general practitioners. In this character alone can we be fully useful to our employers or benefit ourselves.

"ANATOMY comprises the general structure of the body—the form and mechanism of the frame. The bones by which the whole machine is supported—the arteries by which it is supplied with blood—the veins by which the blood is returned for repurification—and the nervous system, by which the whole is influenced and governed.

"PHYSIOLOGY includes the functions of the different parts—the manner in which these important objects are accomplished. I take as an illustration the manner in which that beautiful optical instrument the eye—at once a telescope and a microscope—makes us acquainted with the objects around us; the powerful means of which the ear is alive to the concord of sweet sounds; the taste is gratified by many a delightful flavour, and the whole frame is sensible to the impressions of surrounding objects: these are the

inquiries—this is the business of physiology. It will be delightful to trace the uniformity of the principle by which all is effected, and the same principle pervading universal nature.

“The very law which moulds a tear,  
And makes it trickle from its source;  
That law preserves the earth a sphere,  
And guides the planets in their course.”

“PATHOLOGY, that which will constitute the future practice of the pupil, and to which anatomy and physiology are but introductory, comprises the symptoms and the treatment of disease; and without an accurate knowledge of it, and that knowledge founded on anatomy and physiology, the veterinary surgeon will never shine in his profession.”

Mr. Sewell illustrated this by reference to various diseases of the foot, and shewing how necessary an accurate knowledge of the structure and functions of the foot was, in order to comprehend or to remedy occasional disorganization of its various parts.

“It was only,” he resumed, “by close attention to the anatomy of the part, and the disordered functions which it occasionally exhibited, that the peculiar disease of the larynx and the trachea and its muscles, denominated *roaring*, was discovered. At the commencement of this Institution, neither its nature nor its remedy were known; but now, if it is not of too old standing, and the structural change is not too great, it admits of some palliation at least.

“There is a disease—*Rabies*—which has baffled practitioners in all ages, and for which no cure has yet been discovered: but if we are unable to accomplish a cure, we have arrived at a tolerable agreement with regard to its post-mortem appearances. There is inflammation of the brain, and more particularly of the spinal cord, and of that portion of it whence arise the branches that are distributed to the bitten part.

“CLINICAL INSTRUCTION.—This will be invaluable to the young student. It is by the side of the patient that he will be best able to compare the symptomatology which he has heard expounded by his preceptor, with the real indications of disease. He will parti-



cularly become acquainted with two of the most important of these indications, the pulse and the respiration. It is singular that there should be so much difference of opinion among veterinary men with regard to the healthy state of the pulse and of respiration. I believe that most practitioners and authors reckon from 35 to 42 pulsations to be the usual standard; but, for my part, I must say that, after having examined thousands of horses, and of every size and age, and belonging to every breed, and coming from every climate, I am convinced that from 28 to 36 is the usual range, and oftener nearer to 32 than any other number. The respirations are from 4 to 8 per minute, and 3 when the animal is asleep; but 6 being the standard, or average.

“THE ANATOMICAL LECTURES will no longer be confined to the horse; but a series of lectures on comparative anatomy, including, at least, all the patients of the veterinary surgeon, will be attempted by the Assistant Professor.

“VETERINARY JURISPRUDENCE.—The reputation of the veterinary surgeon will depend much on the manner in which he gives his evidence in a court of justice, and it is a trial that will put him severely to the test. The veterinary surgeon should be well acquainted with every branch of his own profession, and with the bearing of every point of jurisprudence upon it. He should be prepared not only to give a straightforward account of the case, so far as he has seen it; but to answer every question which can, by possibility, be connected with it. There is nothing with regard to which the veterinary surgeon should make himself so intimately and thoroughly acquainted; there is nothing with regard to which he should form a more settled determination to act fairly and honourably.

“With regard to the Veterinary Medical Association:—The principle of mutual instruction is a most advantageous and noble one. The senior will always have something valuable to communicate to the junior, and at the same time may receive from him much that is useful. Associating together with proper feelings and motives, the result will be advantageous to both.

“THE LIBRARY has been considerably enlarged since the last Report, consisting of most of the earliest veterinary works in the

Greek, Latin, French, Italian, and Spanish languages. They form a noble addition to other volumes of English literature which have been recently purchased. There is also one most satisfactory circumstance connected with them,—the whole library is now the property of the Institution, and should scenes, similar to those which passed at the commencement of the Association, again occur, the Library and the Records are perfectly out of the reach of the disaffected.

“Many useful papers belonging to the Association have been published in “The Abstract” of its proceedings. Mr. Simonds’s history of hernia, and the old black mare, and Mr. Gloag’s account of the duties of the cavalry veterinary surgeon, are truly valuable. For the ready admission of these and other important documents, we are much indebted to the Editor of *THE VETERINARIAN*.

“*THE ENGLISH AGRICULTURAL SOCIETY* has shewn an honourable desire to assist in the promotion of the objects of this Institution, or, rather, more fully to accomplish the intentions of its founders; and it therefore has been determined to extend the instruction delivered by the professors to the anatomy and diseases of all domesticated animals. Proper buildings have been erected for the accommodation of these animals. It has been objected to this, that the high price which the carcasses of cattle and sheep and swine will obtain in an early stage of most diseases, will prevent many patients being sent to us to stand the hazard of life or death. This, however, is a most unworthy motive. If this practice does exist to the extent that has been supposed, the strong arm of the law should put it down; but there will be found many zealous and honourable men who will further the object of the Institution by transmitting to it their diseased cattle.

“There are some who, in various districts of the country, have practised largely on the diseases of cattle, and who are capable of communicating instruction to others on this important subject. I should be exceedingly happy to further any views which they may have for the extension of this knowledge.

“Examinations will in future be instituted to ascertain how far the pupils have devoted their attention to all the objects of study. It will be essential that the practitioner, who mingles with the

agriculturists of the present day, should be well acquainted with the maladies of cattle. Located in the country, the practice on the horse will no longer afford him sufficient emolument for the support of his family. He must be able to attend to the ox as well as the horse, or the farrier will beat him on his own ground.

“To the students I would say, that I trust their conduct will entitle them to the respect and friendship of their teachers, and prepare them for an honourable discharge of their duties in after-life. It will be the earnest endeavour of myself and the Assistant Professor to communicate to them that information which will prepare them for the skilful and honourable discharge of their professional duties. A lecture will be delivered daily in this theatre at twelve o'clock, by myself and the Assistant Professor, alternately. The Demonstrator will be found in the dissecting-room; and the valuable lectures on chemistry by Mr. Morton will, I have no doubt, be shortly resumed.”

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This introductory lecture of the new Professor is altogether void of presumption, and there is no censurable expression of bad feeling towards those whom he well knows are hostile to him. He candidly states, that “his situation is different from that of his predecessor, for the instruction of the pupil would now extend to other domesticated animals beside the horse.” He adds, that “preparation has been made for the receiving of them as patients; and he trusted that, in process of time, all the arrangements would be completed, and become alike advantageous to the Institution, the pupil, and the agricultural body.”

We have no right to doubt that this will not be honourably attempted to be accomplished, although we confess that we should have liked to have been let a little into the secret of the means by which these noble objects are to be fully worked out. We should have been pleased to have had the opportunity of judging whether the course intended to be pursued will or can lead to the accomplishment of this purpose, so devoutly to be wished; and by what means all the united talent and labour indispensable to their accomplishment will be furnished and secured.

The new Professor must deeply feel that the eyes of the profession are upon him; and he will be anxious to fulfil, to the very letter, the wishes of the governors, the united body of agriculturists, the profession, the students, and, in fact, of every man of common sense and right feeling.

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On the next day Mr. SPOONER delivered his Introductory Lecture on the Anatomy and Physiology of all Domesticated Animals. We believe the following to be a faithful sketch of a small portion of it:—

“Gentlemen,—The important changes which have of late taken place in this Institution, together with the history of veterinary science, were so fully explained to you yesterday by Professor Sewell, in his introductory lecture, that little is left for me to advance upon the subject, without fear of tiring your patience by a needless repetition of facts of which you are already in possession. I cannot, however, refrain from stating, that a new era appears to have dawned on our infantile art. We are now entering upon a wider field of research than has hitherto been pursued by us; and there cannot, I think, be a question that it will be the means of extending our usefulness, of enhancing our pecuniary interests in a professional point of view, and tending materially to improve the general condition of the inferior creatures, the welfare of the agriculturist, and the prosperity of the community at large. That which has to do with the health, and condition, and usefulness of the millions of noble and valuable quadrupeds by which we are surrounded, is, indeed, an interesting subject of attention and inquiry. The voice of humanity, and the repeated calls of a reflecting public, aided by the exertions of the English Agricultural Society, will, at length, be nobly responded to.

“The Governors of this College, anxious to render it efficient as a veterinary school, and to fully carry out the original intentions of its founders, have determined that the studies of the pupil shall no longer be exclusively confined to the horse, but that his attention shall be alike directed to all domesticated animals. It must be admitted, that, since the scientific and instructive lectures of my esteemed preceptor and valued friend Mr. Youatt were delivered at the London University, the ox, the sheep, the swine, and the dog, and all those animals that constitute so great a portion of the wealth of this country, and contribute so much to our support and to our luxury, have been, in a great measure, overlooked by this school, up to the last session, when your now much respected Professor, Mr. Sewell, so far as his health would permit,

extended his valuable pathological lectures to them; and I, unconnected with the College, ventured to attempt a course of lectures on their anatomy, and to explain the physiological inferences to be drawn therefrom.

“The path, then, which we are now to pursue may be said to have been hitherto almost untrodden; and when I reflect that I now appear before you, for the first time in this Institution, as the appointed teacher of the anatomy and physiology of all domesticated animals, I feel assured that you will pardon me for saying that I have considerable misgivings, lest I should not be able to accomplish the task which I have undertaken with that benefit to my pupils which they have a right to expect from me as the director of so important a branch of their studies, or to the satisfaction of my professional brethren and the public; yet, from the kind support which I have ever experienced from the members of the profession, and the marked attention and respect with which I have at all times been honoured by my class, I am inspired with a hope that, by industry and perseverance—my heart being in the cause—I may eventually be enabled to accomplish your wishes, and be an humble instrument in contributing to link more firmly the chain of union by which all the members of a liberal profession should be bound together.

“To the pupil who is about to enter upon the studies of his profession it is of the utmost importance that he should be fully aware of the nature of the labours in which he is called upon to engage, and to possess a clear and distinct idea of the manner in which he shall proceed in their acquisition. Among the first of his studies as prescribed by universal consent, and on a thorough acquaintance with which his future success in practice will mainly depend, stands the science, or sister sciences, of ANATOMY and PHYSIOLOGY.

“These terms, as applied to the lower animals, are designated ‘*comparative*.’ Thus ‘COMPARATIVE ANATOMY’ is a science which treats of the structure and general arrangement of the constituents of the bodies of animals; and ‘COMPARATIVE PHYSIOLOGY’ teaches us the uses or functions of these parts. As anatomists, we view the animal frame, in whatever type it is presented to us, as a machine of beautiful workmanship, perfect in itself, which

cannot fail to excite our highest admiration. We see it composed of solid parts, called bones, and of softer structures, termed muscles; of vessels, of nerves, of fasciæ, of cellular tissue, and of integument; these being the primary elements in the composition of the various machines which are to form the subjects of our studies. These, indeed, are the wheels, and springs, and levers, which it is our business to examine, and thoroughly to understand.

“The ossific system is common to most animals, and a comparative glance at the various forms it assumes in different classes opens before us majestic wonders; while it teaches us the uses of many structures otherwise veiled in obscurity, or it explains adaptations of which, without its aid, we should have lived in ignorance.

“How could we indicate the distinctive character of the bird and of the reptile so strikingly as by reference to the structure of their bones? A simple fragment of a fossil bone buried in the earth for a thousand years is, to the comparative anatomist or zoologist, a record of the history and habits of the animal to which it belonged, as evident as if it yet lived and stood before him.”

Mr. Spooner then entered into a long and beautiful illustration of portions, ossific, muscular, vascular or nervous, of the different domesticated animals,—birds as well as quadrupeds. The reporter will not dare to follow him; but it was a splendid outline of the path which he meant to pursue, and of the pleasure and the improvement which must be derived from such a course of study.

“These then, gentlemen, are the materials which compose our subject, and which are to form the theme of our labours during the present session. I have, as it were, culled but a few wild flowers from our prolific field, and have hastily thrown them together for your contemplation. In this selection, imperfect as it is, I have experienced much difficulty: stately and beautiful blossoms stretched themselves to my view; but I have passed them by, seeing that in so vagrant a sketch I could not do justice to their deserts.

“We have refrained, hitherto, from any personal allusions; but ere we conclude, we deem it our duty to express to our hearers and pupils our determination to render the teaching of anatomy and physiology essentially practical: all vain and useless theories we



reject; and the vague and vulgar notions of the uneducated, by which our profession has so long been trammelled, must be cast aside, while we will pass all our information through the searching filter of practical utility. Our anatomy shall be based upon practical application, and our physiology shall be the record of what is really known, and not of what is merely imagined. In our course of physiology, while we shall be careful to leave no subject without a perfect explanation, at the same time we shall be on our guard lest we harass and fatigue the student's attention by an unnecessarily elaborate and tedious minuteness.

"The period which is dedicated to the professional education of the pupil in this Institution previous to his being permitted to become a candidate for his diploma is now, we are happy to announce, prolonged to eighteen months. This salutary change, we doubt not, will have the effect of producing a marked improvement in the professional attainments of those who will hereafter graduate. But the time to be spent here in the pursuit of scientific knowledge is still so limited, that it is a matter of the utmost importance to the pupil so to arrange his various studies that each may obtain its proper share of attention, as nothing can be more injudicious than to pursue a single subject to the neglect of the rest; although this is too frequently done. A certain proportion of information upon the whole of the subjects to which it will be the duty of the teachers of this Institution to direct the attention of the pupil is necessary, to render him fitted for the great end of his studies, viz. to become a practical and scientific veterinarian, and a useful and respected member of society."

We will not add a word to this sketch. It sufficiently speaks for itself.

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The following singular advertisement was sent to our printer for insertion:—

On Tuesday, December 2d, will be published,  
Post 8vo, price 1s.

GNIHTONTUOBAODAH CUM:

Or, Reports of the Decease of an ILLUSTRIOUS PRESIDENT of the LUNARIAN VETERINARY COLLEGE; the Proceedings of the *scarcely less* illustrious Fellows in electing his Successor; and, very neatly annexed, a NEVER-TO-BE-SURPASSED IDEA OF A VETERINARY EXAMINATION—in the Moon, OF COURSE.

J. Pattie, 4, Brydges Street, Catherine Street, Strand; and to be had of all Booksellers and Newsvenders in the United Kingdom.

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The money for the insertion of such an advertisement was, of course, returned. It did not suit the sombre character of the cover of our Periodical.

It may, however, be a mere harmless joke, which some wag is playing upon us. If so, while we know that

“Care to our coffin adds a nail no doubt,”

we are not such churls as to deny that

“Every grin so merry draws one out;”

and we shall be ready and thankful to laugh our fill.

If it should be something more than a joke, those whom it may concern will, doubtless, give the proper answer; and the author of this topsy-turvy, wrong-end-forward-entitled book, will have no right to complain.

## ON THE POWER OF IODINE IN THE DISPERSION OF TUMOURS.

*By Mr. T. WARDLE, East Sheen.*

ON the 3d of July, a black mare, belonging to Mr. Fitch, of Fulham, was received into my infirmary, with a large tumour on the pastern joint of the near fore leg. It had been previously treated by a blacksmith, at Fulham. When she arrived there was one seton through the tumour, but no discharge of matter. I, therefore, determined to insert others, and accordingly passed three additional

ones, and dressed them with digestive ointment until the 26th of the same month. At the expiration of that period, the tumour was of precisely the same character and development as when I commenced the treatment.

I then determined to apply a strong blister, which I repeated on the 3d of August, but there was still no diminution of the tumour: I consequently resolved to abandon these usual, but here inefficient, modes of treatment, and to see what the iodine would do.

I rubbed down the hydriodate of potash with lard in the proportions of ten drachms of the former to seven ounces of the latter, and commenced the application of it on the 13th of August. Half an ounce was gently but well rubbed into the tumour, and the quantity of the unguent was gradually increased until it amounted to an ounce and a half.

Having arrived at this quantity externally applied, I commenced the use of it internally, and gave daily twelve grains of the iodine with three drachms of gentian.

From this period the most marked improvement was observed, and, on the 3d of September, the tumour was not above one-third of its former size. She was then sent to work.

On the 25th of October I had an opportunity of seeing her, and there was a still farther reduction of the enlargement. It is not perceptible while she is at work, and is only to be detected by placing the hand on the part. There is no lameness, and the remaining portion of the tumour is soft when pressed upon.

*Nov. 17th.*—The tumour is quite gone, and there remains only a slight thickening of the skin.

## THE PREVENTION OF CRUELTY TO ANIMALS.

AT the moment that a Society is forming in France for the purpose of devising means to prevent the cruel treatment to which our domesticated animals are too frequently subjected, it may be useful to relate that which is taking place in other countries, with the same noble purpose in view. We make the following extract from a German periodical:—

“The second chamber of the States of the Kingdom of Wirtemberg is about to adopt some new police regulations. Article 54 merits some attention:—‘Whoever shall be found brutally treating any of the domesticated animals, shall for the first offence be subject to a fine of 15 florins (nearly 27s.), or imprisoned eight days. On a repetition of the offence, he shall be fined 25 florins (nearly 43s.), or be imprisoned fifteen days.’”

There is more danger to the public morals than is imagined in permitting the street to become a theatre for the exhibition of the brutal and stupid cruelty of many of the drivers of the public car-



riages. The street is too often the school in which the minds of the children of the lower classes acquire the habits by which their future lives are characterized; and it is the duty of a good police to remove every outrage on common decency, and all that can minister to the gross or ferocious habits of the common people. The consideration which the English jurisprudence has for its horses, may, in the estimation of some persons, border on the ridiculous; but, at all events, to expose ourselves to a little laughter in doing good is better than to give cause for grief by not preventing that which is cruel.—*Journal des Haras, November.*

## CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

NO. XXIV.

*By Mr. YOUATT.*

## RUPTURE OF THE GALL-BLADDER.

Nov. 5, 1839.—A FEMALE SLOTH BEAR had been with us more than ten years. She was a very lazy, greedy, ill-tempered creature, but had not had any severe or dangerous illness, or, in fact, any thing beyond an occasional cough or slight disturbance of the bowels. Last night she was apparently well, and this morning she ate her breakfast as usual, and then cuddled herself up, according to her general custom, in the corner of her cage. She was soon afterwards seen creeping slowly from one end of her cage to the other, moving herself with considerable caution, and whining and groaning as if she was in considerable pain. Her strength seemed to be most rapidly exhausted; and about eleven o'clock she laid herself down, moaning and lifting her head, and extending and contracting her legs, as if she was suffering excruciating pain. There was considerable yellowness of the conjunctiva and of the membrane of the mouth.

My first thought was that of sudden and acute enteritis, or peritonitis; and knowing that it would be impossible to force medicine on such a patient, I ordered some broth, of which she used to be fond, to be got ready, on the top of which two ounces of olive-oil were to be poured; two drops of the croton oil being first offered to her concealed in a nice bit of meat.

While the broth was getting ready, the pain rapidly increased, and she almost shrieked with agony. In an interval of ease she took the meat, but she refused the broth. She was, however, become exceedingly weak, and we managed to force upon her at different times a portion of the broth and more oil. There were not any evacuations; but the pains seemed gradually to abate, or, rather, perhaps, her strength wasted, and early in the morning she died.

Mr. Gulliver, assistant surgeon to the Royal Regiment of Horse Guards, was present at the post-mortem examination. On dissecting back the skin of the abdomen, we found a more intense yellowness of the cellular membrane, and, as we proceeded in our search, every portion of adipose matter and cellular texture was found to be deeply stained with yellow. The omentum and mesentery, and peritoneal coat, were likewise of the same colour. The parietes of the large intestines were thickened in several places for the space of an inch or more. On cutting into them, we found some induration of the parietes generally, and ulceration of the mucous membrane within. With these exceptions the intestinal tube was sound. The spleen also was healthy.

The liver was strangely hepatized. It was not much enlarged, but it was of a pale-brown yellow colour, opposing, not an elastic, but a firm dead resistance to the touch, and when it was cut into every vessel seemed to be in a manner obliterated. The gall-bladder was strangely distended. It protruded a couple of inches below the lobe of the liver; and at the point where its parietes separated from the liver it was ruptured, and a black coagulated substance, as large as the top of a finger, protruded. A little on one side of and parallel with this rupture the parietes of the gall-bladder had also given way, and the peritoneal coat alone prevented the protrusion of more of this black viscid mass.

This substance might be well mistaken at first for coagulated blood. At its first appearance we thought it to be blood; it was quite as dark as that fluid, but it left the stain of bile on the fingers. No portion of it had separated and fallen into and stained the abdominal cavity. A portion of it had broken through the parietes of the vesica fellea, but it tenaciously adhered to the portion yet remaining within. We cut into it, and there escaped a viscid coagulum of the form and size of the gall-bladder, with a few drops of black grumous fluid dropping from it. The hepatic duct and the ductus communis choledochus were partly occupied by a similar substance.

Dr. Marshall Hall, in his Lectures on the Theory and Practice of Medicine, speaking of rupture of the gall-bladder in the human being, very accurately describes, with one exception—that of vomiting—the symptoms which attended this case. “The symptoms are those of the most sudden and acute peritonitis: excruciating pain and tenderness, sickness, sinking, and, in a word, the symptoms observed in perforation of the stomach or intestine\*.”

It is noticed in both works of Andral, but it is perfectly new in the records of veterinary medicine. Has it come under the notice of any of our brethren?

\* *Lancet*, 37, 8, II. 420.

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